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Finger Lakes National Forest

Executive Summary

of the Final Environmental Impact Statement for the 2006 Land and Resource Management Plan

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Executive Summary
Final Environmental Impact Statement
for the Land and Resource Management Plan

Finger Lakes National Forest

Eastern Region
Milwaukee, Wisconsin
April 2006

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Abstract: In May 2005, the Forest Service released for public review and comment a Draft Environmental Impact Statement (DEIS) that described three possible ways to manage the Finger Lakes National Forest (FLNF). Alternative 3 was the Preferred Alternative in the DEIS and was the foundation for the Proposed Revised Forest Plan. Alternative 3 was modified in the Final Environmental Impact Statement (FEIS) to address public comments and new information received since the release of the DEIS. Alternative 3 is referred to as the "Selected Alternative" or "Alternative 3 Modified" in the Record of Decision, some parts of the FEIS, and FEIS Appendix G – Responses to Public Comments.

The Selected Alternative, outlined as the Finger Lakes National Forest 2006 Land and Resource Management Plan (2006 Forest Plan), guides all natural resource management activities on the Forest; addresses new information and concerns raised since the 1987 Forest Plan was published; and meets objectives of federal laws, regulation, and policies. The rationale for choosing Alternative 3 Modified as the Selected Alternative is described in the Record of Decision.

As the population of the country rises and demands on the timber, forage, water, wildlife, and recreation resources increase, the national forests more and more provide for the material needs of the individual, the economies of the towns and States, and contribute to the Nation's strength and well-being. Thus the national forests serve the people.

- Edward P. Cliff, Ninth Chief of the USDA Forest Service, *The USDA Forest Service – The First Century,* FS 650, Washington DC, July 2000

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1.1 CHAPTER 1 - PURPOSE AND NEED

1.1.1 Introduction

The Executive Summary provides an overview of the Final Environmental Impact Statement (FEIS) for revision of the 1987 Finger Lakes National Forest Land and Resource Management Plan (Forest Plan or Plan). The Finger Lakes National Forest (FLNF) consists of over 16,000 acres located in central New York within Seneca and Schuyler Counties. The Forest provides a diverse mix of public land use opportunities including various recreation activities, grazing, wildlife habitat, clean water, and wood products. The USDA Forest Service administers the FLNF, aided by partners, other agencies, and individual volunteers. The FLNF has a local office in the town of Hector, with the administrative headquarters for the Forest currently located in Rutland, Vermont.

This FEIS discloses the potential effects of implementing three alternatives for revising the Forest Plan in a comparative format. Included in the analyses are the potential physical, biological, social and economic effects from implementing each alternative. The selected alternative will become the 2006 Finger Lakes National Forest Land and Resource Management Plan (2006 Forest Plan), and will supercede the 1987 Plan. The FEIS follows the implementing regulations of the National Environmental Policy Act (NEPA) found in 40 CFR, Part 1500-1508.

1.1.2 Forest Plan Decisions

The current FLNF Forest Plan was approved by the Eastern Regional Forester in January 1987, and has been amended four times. Revision of the Plan is now needed to meet Federal law and regulations as well as address new information about the Forest and its uses. The intent of the revised Forest Plan is to guide all natural resource management activities, establish management goals and objectives, allocate lands to different management emphases, provide standards and guidelines for Plan implementation, and set the criteria for monitoring and evaluation of management activities on the FLNF over the next 10 to 15 years.

The FLNF Forest Plan revision process follows the 1982 planning regulations (36 CFR Part 219) for developing forest plans pursuant to the National Forest Management Act (NFMA). Planning actions required by the NFMA and used in this planning process are:

- Identification of issues, concerns, and opportunities
- Development of planning criteria
- Inventory of resources and data collection
- Analysis of the Management Situation
- Formulation of alternatives
- Estimation of effects of alternatives
- Evaluation of alternatives
- Recommendation of a preferred alternative
- Approval and implementation
- Monitoring and evaluation

The following key decisions are made in a Forest Plan:

1. Forest-wide multiple-use goals and objectives (36 CFR 219.11(b))
2. Forest-wide management requirements (such as standards and guidelines) (36 CFR 219.13-27)
3. Management area direction (36 CFR 219.11 (c))
4. Lands suited and not suited for timber production (36 CFR 219.14), and establishment of an allowable sale quantity (36 CFR 219.16)
5. Monitoring and evaluation requirements (36 CFR 219.11 (d))
6. Recommendations to Congress (such as wilderness designations) (36 CFR 219.17)
7. Lands suited and not suited for grazing and browsing (36 CFR 219.20)

The Regional Forester for the Forest Service Eastern Region located in Milwaukee, Wisconsin is the Responsible Official for the analysis and decisions for Forest Plan revision. Alternative development, conducting the analysis, and DEIS and FEIS preparation were done at the local Forest level under the direction of the Forest Supervisor of the Finger Lakes National Forest. The Regional Forester selected Alternative 3 Modified to become the revised Forest Plan based on public comments received on the DEIS, and the analysis in the FEIS. The Regional Forester has provided the rationale for alternative selection in the Record of Decision (ROD) accompanying the FEIS. The alternative selected will include the seven key forest plan decisions.

1.1.3 Purpose and Need for Change

The purpose of Forest Plan revision rests in the NFMA and its implementing regulations contained in 36 CFR 219 (1982), which requires National Forests to revise forest plans:

- Every 10 to 15 years
- When conditions or demands in the area covered by the plan have changed significantly
- When changes in agency policies, goals, or objectives would have a significant effect on forest level programs
- When monitoring and evaluation indicate that a revision is necessary

There are three primary reasons to revise the 1987 Forest Plan:

1. It has been over 15 years since the Regional Forester approved the 1987 Plan.
2. Agency goals and objectives, along with other national guidance for strategic plans and programs, have changed.
3. New issues and trends have been identified that could change the management goals, management areas, standards and guidelines, and monitoring and evaluation direction in the 1987 Plan.

Public dialogue and Forest Service staff evaluation of 1987 Plan implementation monitoring were used to complete the Analysis of the Management Situation (AMS) published in a report entitled, *Implementing the Finger Lakes National Forest Land and Resource Management Plan – A 15 Year Retrospective*. This report is based on 15 years of Forest Service monitoring, the experience of Forest Service resource managers' implementing the Forest Plan, and public input. A total of 18 separate resource issues were identified that have helped focus what management direction in the 1987 Plan is in need of change. These issues were grouped into 12 issues that are now the basis of the revision process.

1.1.4 Proposed Action

The proposed changes to the 1987 Forest Plan include a restructuring of the Management Area descriptions that guide the management direction across the Forest; changes in Management Area allocations to provide a range of management opportunities and to achieve desired future conditions; changes to goals, objectives, standards, and guidelines for desired direction, relevance, consistency, and accuracy; and addressing minor overall inconsistencies in the 1987 Plan. More far reaching proposed changes are associated with the primary issues used to develop the need for change of the 1987 Plan. The proposals specific to these issues include the following:

Biodiversity and Ecosystem Management

- Consider biodiversity and natural communities at a variety of landscape scales and landscape patterns
- Provide for mixes of desired and viable plant and animal species populations, natural communities, and landscape patterns
- Revise the Forest's management indicators including Management Indicator Species (MIS)

Recreation Management

- Provide for the appropriate mix of primitive, dispersed-use opportunities and more developed, higher density opportunities
- Provide guidance for the use of mountain bikes and the use of motorized vehicles such as snowmobiles and off-highway vehicles
- Provide guidance for the number, general location, and acceptable uses of trails, including separation of conflicting uses and accessibility

Timber Management

- Determine an appropriate level for timber harvesting
- Establish methods and uses for vegetation management
- More clearly define the desired mix and location of various vegetative forest types and age class distributions

1.1.5 Public Involvement and Collaborative Planning

Public involvement and input have been essential elements of the plan revision process since it began in 1996. This process was designed to identify changes needed in the 1987 Plan. One of the goals of this process was to emphasize public involvement and community partnerships. Forest Plan revision is a process that relies heavily on the collaboration of many stakeholders and the resolution of many issues. The FLNF planning team focused on creating an atmosphere of openness in which all members of the public would have an opportunity to share information.

To this end, the Forest Service has sought information, comments, and assistance from individuals, organizations, tribal governments, and federal, State, and local agencies that are interested in, or may be affected by the proposed action (36 CFR 219.6). The Forest Service has also pursued collaborative approaches with members of the public who are interested in forest management.

Since the initiation of the Plan revision process, Forest Service staff has implemented a thorough and active public involvement effort. A variety of public involvement tools and methods were used including public meetings, open houses, field trips, newsletters, news releases, and meetings with special interest groups upon request. Throughout the revision process the public has been encouraged to call, visit the office, and/or submit letters and/or emails to have their comments and questions addressed. The involvement of the public has enabled the Forest Service to accomplish the following:

- Keep the public informed during the entire process
- Gather public input on issues
- Formulate alternatives
- Define the scope and nature of the decisions to be made
- Address various management conflicts

In May 2005 the Forest Service released the DEIS and Proposed Revised Forest Plan for public review and initiated a three-month public comment period.

After the release of the Proposed Revised Forest Plan and DEIS documents, the Forest Service held another open house meeting. This meeting was an important public forum to ask questions about the Proposed Revised Forest Plan in order to provide more informed and meaningful comments.

The Forest Service received more than 550 responses, including letters and emails, on the Proposed Revised Forest Plan and DEIS. Those responses contained more than 100 substantive comments. Substantive comments are addressed in the FEIS Appendix G – Responses to Public Comments.

Continuous public involvement throughout the Plan revision process will facilitate the eventual implementation of the revised Plan. To this end, the Forest Service intends to maintain consistent public involvement as the 2006 Forest Plan is implemented by site specific project planning.

1.1.6 Issues

Forest plan revision issues are those areas of Forest management that require a change as a result of new scientific information, changed resource conditions, a better understanding of previous management based on monitoring and evaluation information, and/or changing public needs.

Twelve separate but interrelated issues were identified through the public involvement process for Forest Plan revision. These issues were evaluated, developed, and grouped into categories based on 1) their degree to which they would affect Forest Plan direction, management area designations, goals, objectives, standards and/or guidelines; and 2) the level of concern they received from the public and Forest Service staff.

Major issues are those that were identified to have the most potential impact on the management of the Forest and direction of the Plan. These issues reflect the subject areas that have been proposed for the most change in management direction from the 1987 Plan and thus were the main factors used to develop alternatives. There are three major issues that were identified that are addressed in this FEIS through alternatives:

1. Biodiversity and Ecosystem Management
2. Recreation Management
3. Timber Management

Other issues were identified that although didn't trigger a need for alternative development, were still important enough to address in the context of the analysis in the FEIS. These issues could still have a considerable impact on the management of the Forest and direction contained in the Plan, but to a lesser degree than the major issues. These issues are addressed across all alternatives either through goals, objectives, standards, guidelines, or management direction, and include:

1. Role of the Finger Lakes National Forest
2. Socio-economic Concerns
3. Mineral Management - Oil and Gas Availability
4. Land Acquisition
5. Special Use Management
6. Areas of Significance - Special Designation Areas
7. Heritage Resources
8. Information and Education
9. Monitoring and Evaluation

Detailed issue statements associated with the major and other issues are provided in Chapter 3 of this summary.

Snowshoe Race on the Finger Lakes National Forest

2. 1 CHAPTER 2 – ALTERNATIVES

2.1.1 Alternative Development

The alternatives include different options to resolve issues and to fulfill the purpose and need discussed in Chapter 1. The public, other federal, State and local agencies, as well as Forest Service employees, contributed to the identification of three "major" issues that are addressed with alternatives in the FEIS. Following an interdisciplinary approach, the Forest Service used the three major issues as the primary basis on which to focus development of three alternatives that have been carried forward for detailed analysis in the FEIS. While all three alternatives provide a wide range of multiple uses, goods and services, each addresses the issues in different ways.

Public participation through local planning group meetings held from 2003 into the spring of 2004 helped focus the issues and scope of needed alternative development. Following these meetings, Forest Service staff developed preliminary alternatives in response to the issues and need for change. The preliminary alternatives were presented at a public meeting in March 2004. Many of the comments received during and after the meetings were incorporated into alternative design, and led to the final three alternatives that were brought forward for analysis in the DEIS.

2.1.2 Changes between the Draft and Final Environmental Impact Statements

The Forest Service received more than 550 well-prepared and constructive comments on the Proposed Revised Forest Plan and DEIS during the three-month public comment period. Both public and internal comments were considered in preparing the FEIS and 2006 Forest Plan.

Changes made to the Proposed Revised Forest Plan have been incorporated into the alternatives. No additional alternatives were included for detailed analysis in the FEIS. Changes made ranged from minor editing for improved clarity to changes in Forest Plan goals, objectives, standards, guidelines, and MA direction and allocation. Some changes resulted from data corrections, new survey information, and field verification. The following summary describes the most substantial changes made in the 2006 Forest Plan. A complete list of changes can be found in the FEIS planning record.

Public comments also identified the need for several improvements to the analysis and presentation of materials in the FEIS. As a result, editorial discrepancies, minor inconsistencies, or gaps in the presentation of information in the DEIS have been corrected in the FEIS. These changes are noted in the respective Forest Service responses in the FEIS Appendix G - Response to Comments.

Changes to Management Area Allocations

- There were 280 acres added to the Future Old Forest Management Area (MA),174 acres removed from the Oak Hickory MA, and 106 acres removed from the Northern Hardwood MA

Changes to Goals and Objectives
- The age class objectives under Goal 2 have been revised to be more consistent with desired conditions
- A new objective has been added to Goal 4 concerning water resource protection in grazing allotments

Changes to Standards and Guidelines
- Standard has been added to the minerals standards and guidelines to clarify that under the Energy Policy Act of 2005, the FLNF is no longer available for oil and gas development
- Soil, water, and riparian area standards and guidelines have been modified to provide greater clarity in the intended protection of wetlands and riparian areas
- The standards and guidelines for threatened, endangered, proposed, sensitive species; rare and exemplary natural communities have been revised to provide a greater level of detail and direction for rare and unique biological features
- The standards and guidelines for great blue heron and northern goshawk have been modified and clarified

Changes to Plan Appendices
- Grassland Management Indicator Species (MIS) have been revised from woodcock to an assemblage of grassland songbirds comprised of eastern meadowlark, bobolink, and savannah sparrow
- The Allowable Sale Quantity in Alternative 3 increased from 245 thousand board feet (MBF) to 258 MBF due to changes in management area allocations

Changes to the Environmental Impact Statement
- Information has been revised in the Fire Management Chapter 3 section to better reflect fire conditions applicable to the Finger Lakes National Forest

2.1.3 Elements Common to All Alternatives

All alternatives were designed to:
- Comply with applicable laws, regulations, and policies (a complete list is found in Appendix E of the 2006 Forest Plan)
- Meet the minimum management requirements of 36 CFR 219.27. These requirements guide the development, analysis, approval, implementation, monitoring, and evaluation of forest plans
- Include the same goals, objectives, and forest-wide standards and guidelines
- Include the same Monitoring and Evaluation Plan as described in Chapter 4 of the 2006 Forest Plan

The alternatives allocate land among different Management Areas (MAs). Each alternative includes a different combination of MA acres applied in varied spatial patterns. Each MA has a unique emphasis, desired condition of the land, and standards and guidelines. A detailed description for each MA can be found in Chapter 3 of the 2006 Forest Plan. The following is a list of the MAs considered in Forest Plan revision.
- MA 1.1 Grassland for Grazing
- MA 1.2 Grassland for Wildlife
- MA 1.3 Shrubland
- MA 2.1 Northern Hardwood
- MA 3.1 Oak-Hickory
- MA 6.1 Future Old Forest
- MA 8.1 North Country National Scenic Trail Special Area
- MA 8.2 Recreation and Education Special Area
- MA 8.3 Existing and Candidate Research Natural Areas
- MA 8.4 Ecological Special Areas

2.1.4 Alternatives Considered in Detail

Three alternatives are analyzed in detail in the FEIS including the "no-action" (current management) alternative. Table ES-1 provides the Management Area allocations for each alternative.

Alternative 1 (Current Management)

Alternative 1 is the "no-action" alternative for this FEIS. This alternative serves as the baseline for comparison of the other alternatives. "No-action" for purposes of this analysis is considered "no change" from current management direction provided in the 1987 Forest Plan. It reflects the current level of goods and services provided by the Forest and the most likely amount of goods and services expected to be provided in the future if current management direction continues. Most of the same changes identified for the other alternatives specific to the goals, objectives, standards and guidelines, and management area direction have been incorporated into Alternative 1 in order to reflect necessary improvements to the Forest Plan identified through monitoring since 1987.

Alternative 1 Highlights

- Alternative 1 would be consistent with the level of management intensity envisioned under the 1987 Forest Plan
- Greatest amount of grasslands and shrublands
- Lowest number of Ecological Special Areas
- Greatest number of oak-hickory acres.
- Offers greatest opportunity for future snowmobile trail development
- Least amount of semi-primitive desired Recreation Opportunity Spectrum (ROS) class

Alternative 2

Alternative 2 was developed to address a public desire for larger undisturbed areas with less human intervention and semi-primitive recreation opportunities. This desire was expressed by some members of the public during public meetings and during review of FLNF resource maps.

Alternative 2 Highlights

- Lowest amount of grasslands and shrubland MAs
- A small amount of existing shrubland would revert to forest to provide continuity in the forested areas
- Lowest amount of combined acreage in northern hardwoods and oak-hickory
- Large areas of forest would be designated for little or no timber harvest
- Greatest amount of Future Old Forest acreage
- Greatest amount of closed canopy forest
- Offers lowest opportunity for future snowmobile trail development
- Greatest amount of semi-primitive desired Recreation Opportunity Spectrum (ROS) class

Alternative 3 – Selected Alternative

Alternative 3 was developed to address a public desire for interior forest and semi-primitive recreation opportunities as well as oak and northern hardwood management for wildlife and timber. This desire was expressed by some members of the public during public meetings and during review of FLNF resource maps. This alternative is based more on current ecosystem and vegetative conditions than the other alternatives.

Alternative 3 Highlights

- Second greatest combined amount of northern hardwoods and oak-hickory, only slightly less than Alternative 1
- Second greatest amount of grasslands and shrublands, but only slightly more than Alternative 2
- There would be more Future Old Forest acres than in Alternative 1, but considerably less than in Alternative 2
- Greatest amount of acreage in Ecological Special Areas
- Offers an intermediate opportunity for future snowmobile trail development
- Intermediate amount of semi-primitive desired Recreation Opportunity Spectrum (ROS) class

2.1.5 Alternatives Eliminated from Detailed Study

Alternatives with No Timber Harvesting or Large Increases in Timber Harvesting

These alternatives were considered to address public issues regarding whether timber harvesting should be allowed on the FLNF, and if so, at what level.

An alternative that would eliminate timber harvesting on the FLNF was considered but not analyzed in detail because it would not adequately address the issues and meet the purpose and need criteria set for revising the Forest Plan. The provision of sustainable supplies of timber products is one of several of the original purposes for establishing national forests, as described in the Organic Act and Weeks Act. The Forest Service has been practicing sustainable silvicultural practices on the FLNF since it began managing the area in the 1950s. The Forest is now at a point where long-term investments, such as thinning, stand improvement harvesting, and activities that enhance biological diversity, would be more fully realized with continued management.

Achieving the goals, objectives and the desired future condition of the Forest described in the 2006 Forest Plan are dependent on the relatively small but important level of timber management. Timber harvesting is a necessary management tool for the production of commercial wood products, the creation and maintenance of varied wildlife habitat conditions, the maintenance and enhancement of natural communities, and maintenance, enhancement, and protection of other resources. Without the use of timber harvesting to achieve these key objectives, this alternative would not meet aspects of the purpose and need dealing with providing a diversity of vegetative communities and wildlife habitats.

An alternative that called for large increases in timber harvest was also considered but not analyzed in detail because maximizing timber production would not need aspects of the purpose and need dealing with the need to manage and protect other resources.

The issue associated with the role of timber harvesting, the amount of timber that should be cut, harvest methods that should be used, and timber management intensity is addressed at various levels in the three alternatives included for detailed analysis in the FEIS.

Alternatives with No Livestock Grazing

These alternatives were considered in response to public comments that there should be no grazing on the Finger Lakes National Forest. One alternative without livestock grazing would allow grassland habitat to revert to forest. Another alternative would be to maintain the grassland habitat with methods other than livestock grazing.

Foraging cattle are an important tool in maintaining open, grass-forb habitat that benefits many wildlife species, adds to the scenic desirability and character of the region, provides recreation opportunities, and increases the vegetative diversity of the Forest. Without livestock grazing aspects of the purpose and need for plan revision related to providing wildlife habitat, vegetative diversity, a

mix of recreation opportunities and economic benefits could not be achieved.

The alternative that would maintain the grassland habitat with methods other than livestock grazing was not analyzed in detail because maintenance of that amount of grassland habitat using other methods such as mowing or fire would be technically and economically infeasible. Revenues collected from the grazing permits help offset the costs of maintaining these grassy openings.

Alternatives Adding New Trails

These alternatives address the public desire for more trails on the FLNF. Alternatives that added new trails were not analyzed in detail because the revised Forest Plan does not make site specific decisions such as specific trail locations. The Forest Service has completed a detailed Trails Analysis Process for the FLNF (TAP, see FEIS Appendix F) and has recommended three trails for future site specific study. All three alternatives analyzed in detail allow future trail development on the majority of the Forest.

Alternative Making Oil and Gas Resources Unavailable for Leasing

An alternative making oil and gas resources unavailable for leasing on the FLNF was considered in response to public opposition. An alternative that makes the oil and gas resource unavailable for leasing would not meet proposed Forest Plan revision management direction for available mineral leasing. Withdrawing the FLNF lands from availability for leasing would also be inconsistent with Presidential and Congressional intent for mineral leasing on public lands, and Forest Service mineral policy.

Furthermore, subsequent to the issuance of the DEIS, oil and gas leasing on the FLNF was prohibited by the Energy Policy Act of 2005. Therefore, a single alternative making leasing unavailable became unnecessary, as all alternatives are subject to this law. For these reasons, this alternative was eliminated from detailed analysis.

Alternative with All Ravines and Water Courses as Special Areas

This alternative was considered in response to public comments collected during the public mapping sessions. During these sessions, some maps were developed that included every ravine and water course as a Special Area. Individual Special Areas are designated within the Ecological Special Areas MA to protect specific resources that are of forest-wide or regional significance.

All ravines and water courses are not of forest-wide or regional significance. Management standards and guidelines contained in the revised Forest Plan provide protection for ravines and water courses, and it is not necessary to protect all of these resources by Special Area designation. Therefore, an alternative designating all ravines and water courses as Special Areas was not analyzed in detail because the need to protect these areas was already incorporated in all other alternatives.

Alternative Changing the Finger Lakes National Forest into the Finger Lakes National Park

This alternative was considered in response to comments that the Finger Lakes National Forest should become a National Park. An alternative that gives administrative responsibility of the Finger Lakes National Forest to the National Park Service of the Department of the Interior was not analyzed in detail because it is outside of the scope of the revised FLNF Forest Plan analysis. It is also outside the authority of the Responsible Official for this FEIS since a decision of this magnitude would be made at the congressional level.

Alternatives Increasing the Ecological Reference Area Network

There were several suggested alternatives in response to the DEIS preferred alternative that included a change in and an increase of land allocation to Management Areas (MAs) within the ecological reference area network (Future Old Forest, Research Natural Areas, and Ecological Special Areas MAs). The main theme of these alternatives is to include as many existing older stands as possible within the network into large contiguous blocks across the Forest landscape. Specific configurations were presented that focused on protecting additional stands that are currently 70 to 80 years old or older by allocating them to the Future Old Forest (FOF) MA, eliminating proposed allocations of land to this MA that are considered low quality examples of potential future old forest stands, and significantly enlarging the ecological reference area network at the south end of the Forest by including all or most of the federal ownership south of Mathews Road within the FOF MA.

The specific configurations of FOF MA allocation suggested were considered but dismissed from detailed analysis because they do not adequately address the issues and meet the purpose and need criteria set for revising the Forest Plan. Large portions of the area suggested are dominated by plantations and other stands younger than 70 years old. Although there would be an increase in the proportion of stands 80 years or older within the ecological reference area network, these configurations would include less desirable stands. It was also suggested to eliminate the northernmost patch of FOF MA included in the preferred alternative. This patch contains the largest concentration of older forest on the FLNF, and it provides for much needed interior forest habitat in an area that is dominated by open lands. In addition, the northernmost patch of FOF MA is the only one to represent the Ecological Landtypes that dominate the northern portions of the Forest. The specific configurations of FOF MA allocation suggested were considered but dismissed from detailed analysis, because they do not adequately address aspects of the purpose and need for revising the Forest Plan related to old-growth characteristics objectives.

The allocation of large amounts of forested stands within the network simply because they are currently 70 to 80 years old or older would not help achieve the purpose and need for revising the Forest Plan. If all of these stands are placed within the FOF MA, then production of forest products, particularly sawtimber, would be limited to only that provided through thinning of young stands. Some of these stands are oak and oak-pine natural communities. Oak and oak-pine natural communities are likely to succeed to mesic hardwood forests without the opportunity for silvicultural and/or fire treatments. In addition, if all stands 70 to 80 years or older were placed within the FOF MA, there would be no regeneration harvesting on the Forest and the purpose and need of providing a diversity of wildlife habitats, including early successional habitat, would not be achieved. Without the ability to provide quality sawtimber, maintain or enhance oak dominated forest communities, and maintain the regenerating age class to desired levels, these suggested alternatives fail to meet several aspects of the purpose and need of revising the Forest Plan.

2.1.6 Comparison of Alternatives

Table ES-2 briefly summarizes the environmental effects associated with the major issues and compares them by alternative.

Table ES-1: FLNF Management Area Comparison by Alternative

Management Areas	Alt. 1 Current Management	Alt. 2	Alt. 3
	Acres (%)	Acres (%)	Acres (%)
Grassland for Grazing	5,912 (36%)	5,250 (32%)	5,250 (32%)
Grassland for Wildlife	436 (3%)	688 (4%)	688 (4%)
Shrubland	2,107 (13%)	1,268 (8%)	1,421 (9%)
Northern Hardwood	390 (2%)	3,047(19%)	2,189 (13%)
Oak Hickory	6,779 (41%)	1,127 (7%)	4,036 (25%)
Future Old Forest	n/a	3,821 (23%)	1,398 (9%)
Ecological Special Areas	36 (<1%)	312 (2%)	531 (3%)
Recreation and Education Special Areas	218 (1%)	218 (1%)	218 (1%)
North Country National Scenic Trail Special Area	n/a	164 (1%)	164 (1%)
Existing and Candidate Research Natural Areas	561 (3%)	544 (3%)	544 (3%)
Total	16,439 (100%)	16,439 (100%)	16,439 (100%)

Source: FLNF GIS Alternative 1, 2, and 3 Management Area Layers

‡ Notes:

1. The Interloken Trail and the North Country Trail are considered Special Areas in Alternative 1, however these trails were not given an area in the 1987 Forest Plan. Therefore, these can not be reported in this chart.
2. Shrubland MA acreage is less in Alt. 2 and Alt. 3 than in Alt. 1 because some of the shrubland areas have grown up into forest
3. Ecological Special Area MA acreage is less in Alt. 2 than Alt. 3 because the areas are in the Future Old Forest MA.

Table ES-2: Comparison of Environmental Effects by Alternative			
Issue/Indicator	**Alternative 1**	**Alternative 2**	**Alternative 3**
Biodiversity and Ecosystem Management			
Amount of each major forest community type (composition and abundance)			
Mesic Hardwood Forest Communities	Would provide the least amount of mesic hardwood forest over the long-term (15%). Mesic hardwoods would have a lower abundance than oaks across the FLNF landscape, which would generally be outside the ecological tendencies for this forest community.	Would provide the largest amount of mesic hardwood forest over the long-term (36%). Would increase mesic hardwoods to four times the area represented by oak, which is higher than the ecological tendency for the relative proportion of mesic hardwoods to oak.	Would provide an intermediate amount of mesic hardwood forest over the long-term (26%). Would move the forest closest to maintaining the proportional relationship of mesic hardwoods to oak predicted by ecological tendencies, with mesic hardwoods about 1.7 times as abundant as oaks.
Oak-Hickory and Oak-Pine Forest Communities	Would provide the greatest amount of oak-dominated forest over the long-term (20%). Oak-dominated forests are close to or within the expected ecological tendencies for this forest community.	Would provide the least amount of oak-dominated forest over the long-term (9%) by reducing the amount of oak-dominated forest to half of what currently exists. Would maintain oak-dominated forests well below what would be expected for ecological tendencies.	Would provide intermediate abundance of oak-dominated forest over the long-term (15%). Would move the forest closest to maintaining the expected proportional relationship between oaks and mesic hardwoods predicted by ecological tendencies.
Softwood Forest Communities	The long-term composition of softwoods would be toward the high end of the composition objectives (9%), but reduces the current abundance of softwoods by almost 50 percent compared to current abundance on the Forest.	The long-term composition of softwoods would be toward the low end of the composition objectives (6%), and reduces the current abundance of softwoods by two-thirds. This alternative most reflects the expected ecological tendency of the FLNF.	The long-term composition of softwoods would be toward the middle end of the composition objectives (8%), but reduces the current abundance of softwoods by more than 50 percent compared to the current abundance on the Forest.
Aspen Communities	Would increase the proportion of aspen toward the upper end of the desired range of objectives (3%) over the long-term. Opportunities to manage existing aspen stands and create new stands would be much greater than under Alternative 2.	Would provide fewer opportunities for managing the aspen forest community compared to the other alternatives, but still would maintain aspen at levels greater than expected by ecological tendencies (2%).	Same as Alternative 1.

Table ES-2: Comparison of Environmental Effects by Alternative			
Issue/Indicator	**Alternative 1**	**Alternative 2**	**Alternative 3**
Open Land	Would provide the greatest opportunity to increase open land (54%) over the long-term.	Would provide an opportunity to increase open land to 48% over the long-term.	
Proportion of each major forest community type in various age categories within the lands projected for even-aged silvicultural management (Age Class Distribution)			
Mesic Hardwood Forest Communities	About half of the mesic hardwood stands within lands projected for even-aged silvicultural management on the Forest (51%) would have a balanced age class distribution in the vicinity of the desired age class objectives over the long-term.	Only a very small proportion of mesic hardwood stands within lands projected for even-aged silvicultural management on the Forest (6%) would have an age class distribution balanced to the desired objectives over the long-term.	About a third of the mesic hardwood forest stands within lands projected for even-aged silvicultural management on the Forest (35%) would have an age class distribution balanced to the desired objectives over the long-term.
Oak-Hickory and Oak-Pine Forest Communities	More than half of the oak stands within lands projected for even-aged silvicultural management on the Forest (58%) would have a balanced age class distribution in the vicinity of the desired age class objectives over the long-term.	Only a very small proportion of oak stands within lands projected for even-aged silvicultural management on the Forest (5%) would have an age class distribution balanced to the desired objectives over the long-term.	About a tenth of the oak stands within lands projected for even-aged silvicultural management on the Forest (10%) would have an age class distribution balanced to the desired objectives over the long-term.
Softwood Communities	As the majority of Forest softwood communities are plantations that will naturally convert to northern hardwood, no alternative has a clear advantage in age class distribution for softwood stands within lands projected for even-aged silvicultural management. All achieve the objectives eventually, with Alternative 3 stabilizing a little more quickly.		

Table ES-2: Comparison of Environmental Effects by Alternative			
Issue/Indicator	**Alternative 1**	**Alternative 2**	**Alternative 3**
Aspen Communities	Would provide the most opportunities to manage age class distribution for aspen stands within lands projected for even-aged silvicultural management, since two-thirds of existing aspen stands (65%) are within the Oak Hickory MA that emphasize even-aged management. Would also allocate the lowest proportion of aspen stands (less than 1%) to MAs that emphasize natural processes or limited management.	Would provide the fewest opportunities to manage age class distribution for aspen stands within lands projected for even-aged silvicultural management, compared to the other two alternatives since only 1% of existing aspen stands occur within the Oak Hickory MA. Would also allocate the highest proportion of aspen stands (63%) to MAs that emphasize natural processes or limited management.	Would provide fewer opportunities to manage age class distribution for aspen stands within lands projected for even-aged silvicultural management than Alternative 1, since less than half of existing aspen stands (45%) occur within the Oak Hickory MA. Would also allocate an intermediate proportion of aspen stands (23%) to MAs that emphasize natural processes or limited management.
Acres providing grassland habitat	Alternative 1 proposes the greatest acreage (5,400 acres) of grazed grasslands, and the smallest (310 acres) of un-grazed grasslands.	Alternatives 2 and 3 provide an identical combination and distribution of grasslands: 5,100 acres of grazed grasslands and 680 acres of un-grazed grasslands.	
Acres providing shrubland habitat	Would provide the most acreage of shrubland habitat (1,400 acres), on 9% of the Forest.	Would provide the least acreage of shrubland habitat (1,100 acres), on 7% of the Forest.	Would provide an intermediate amount of acreage of shrubland habitat (1,200 acres), on 8% of the Forest.
Acres providing contiguous, mature habitat	Would provide a slightly lower emphasis on mature and older forest communities, but in the short- term these differences are negligible. The greater difference is that the areas that will develop into older forest are more scattered and provide less contiguity.	Would allocate the greatest amount of land to MAs that will develop into old forest, the greatest acreage managed under uneven-aged silvicultural methods, and the greatest connectivity and contiguity of the combined old and mature forest communities.	Lands that develop into old forest would be centrally located, with limited occurrence at the northern extremities of the Forest. Connectivity of old forest development similar to Alternative 2, but less connectivity than Alternative 2 between areas where uneven-aged silvicultural methods are used and those managed for older forest.

Table ES-2: Comparison of Environmental Effects by Alternative			
Issue/Indicator	**Alternative 1**	**Alternative 2**	**Alternative 3**
Acres within the ecological reference area network (cRNAs, RNAs, eSAs, Future Old Forest MA, and some unsuitable lands for timber production)	Would allocate the lowest amount of land (783 acres or 5% of the Forest) to areas where natural processes dominate and where old growth characteristics will develop in the long-term.	Would allocate the most amount of land (4,854 acres or 30% of the Forest) to areas where natural processes dominate and where old growth characteristics will develop in the long-term.	Would allocate an intermediate amount of land (2,655 acres or 16% of the Forest) to areas where natural processes dominate and where old growth characteristics will develop in the long-term.
Percentage of ecological units represented within the ecological reference area network	All 14 ELTs are represented in the ecological network, but at percentages ranging from less than one percent to 30 percent. Most ELTs have less than ten percent of their acreage in the network. Nine out of 14 ELTs have less than five percent within the network. Three of the six LTAs are represented at five percent or more, while the other three LTAs are less than the five percent objective.	All 14 ELTs and six LTAs are represented at above five percent. Alternative 2 has the highest representation of ELTs represented in the ecological network, ranging from 14 to 72 percent of ELTs represented. LTAs are similarly well represented, ranging from 10 to 50 percent.	All 14 ELTs and six LTAs are represented at above five percent. Alternative 3 is intermediate in providing representation of ELTs in the ecological network, ranging from six to 43 percent. LTAs representation ranges from seven to 44 percent.
Acres of habitat available for Management Indicator Species (MIS) and their population trends	All three alternatives provide availability of each of the important habitat types and conditions for MIS on the FLNF. MIS would find suitable conditions under each alternative, both in the short and long-term. The availability of oak-hickory habitat should increase slightly over the current condition due to natural succession of some softwood stands, but does not vary among alternatives over the short-term.		
	Would provide abundance of aspen at the upper limit (500 acres or 3% of the Forest) of the desired composition range for this habitat type over the short-term. Provides the most emphasis on average acreage of young deciduous tree habitat (about 330 acres) over the short-term.	Would provide abundance of aspen below the desired composition range for this habitat type over the short-term (150 acres or 1% of the Forest). Provides the least emphasis on average acreage of young deciduous tree habitat (about 40 acres) over the short-term.	Would provide abundance of aspen approaching the upper limit (380 acres or 2% of the Forest) of the desired composition range for this habitat type over the short-term. Provides an intermediate emphasis on average acreage of young deciduous tree habitat (about 110 acres) over the short-term.

Table ES-2: Comparison of Environmental Effects by Alternative			
Issue/Indicator	**Alternative 1**	**Alternative 2**	**Alternative 3**
Viability outcomes for species of potential viability concerns	All alternatives promote the protection, enhancement, or maintenance of species of potential viability concern, and the habitats on which these species depend. Although there may be impacts on some species, implementation of any of the revised Plan alternatives is not likely to result in a trend toward federal listing, or loss of viability, for species listed as Sensitive by the Regional Forester on the FLNF.		
Recreation Management			
Desired Recreation Opportunity Spectrum (ROS) classes	Would provide for most of the Forest to be managed toward the Rural (40%) and Roaded Natural (56%) Desired ROS classes. There would be no Semi-primitive Motorized class emphasized and Semi-primitive Non-motorized would be 4% of the Forest.	Would provide for the majority of the Forest to be managed toward the Rural (37%) and Roaded Natural (33%) Desired ROS classes, but provides for the greatest amount of Semi-primitive Motorized class (23%), and would provide for an intermediate amount of Semi-primitive Non-motorized Desired ROS class (6%).	Would provide for most of the Forest to be managed toward the Rural (37%) and Roaded Natural (47%) Desired ROS classes. Places more emphasis on Semi-primitive Motorized ROS than Alternative 1 (9%), but less than Alternative 2. Semi-primitive Non-motorized ROS class would be emphasized greatest in this Alternative (8%).
Number of acres available for development by trail activity	All alternatives would provide for 97% of the FLNF to remain open for future hiking and cross country skiing trail development. All alternatives would provide for 96% to 97% of the FLNF to remain open for future horseback riding trail development and future mountain biking trail development.		
	Would provide for the greatest amount (95%) of the Forest to remain open for future snowmobile trail development.	Would provide for the least amount (69%) of the Forest to remain open for future snowmobile trail development.	Would provide for an intermediate amount (83%) of the Forest to remain open for future snowmobile trail development.
Acres of land available for future developed recreation facilities	Would provide for the greatest amount (96%) of the Forest to remain open to future developed recreation opportunities.	Would provide for the least amount (71%) of the Forest to remain open to future developed recreation opportunities.	Would provide for an intermediate amount (84%) of the Forest to remain open to future developed recreation opportunities.
Acres of land available for recreation special use activities	Would provide for the greatest amount (95%) of the Forest to remain open to future recreation special use activities.	Would provide for the least amount (69%) of the Forest to remain open to future recreation special use activities.	Would provide for an intermediate amount (83%) of the Forest to remain open to future recreation special use activities.

Table ES-2: Comparison of Environmental Effects by Alternative			
Issue/Indicator	**Alternative 1**	**Alternative 2**	**Alternative 3**
Timber Management			
Acres of land Identified as suitable for timber production	Would have the greatest amount of suitable forest land. A total of 6,677 acres (41% of the Forest) would be considered suitable for timber production.	Would have the least amount of suitable forest land. A total of 3,846 acres (23%) of the Forest) would be considered suitable for timber production.	Would be intermediate in the amount of suitable forest land. A total of 5,700 acres (35% of the Forest) would be considered suitable for timber production.
Timber sale volume Average Annual Allowable Sale Quantity (ASQ)	Would have the highest timber volume that could be sold of all the alternatives. Would average 425 MBF annually that could be sold for the first two decades and increases to 439 MBF annually over the long-term.	Would have the lowest timber volume that could be sold of all the alternatives. Would average 94 MBF annually that could be sold over the short and long-term.	Would have an intermediate timber volume that could be sold compared to the other two alternatives. Would average 258 MBF annually that could be sold over the short and long-term.
Acres of harvest treatment methods	Would have the highest potential for even-aged management (97 average annual acres) <u>Even-aged Management</u> • Thinning Harvest: 55 acres • Shelterwood Regeneration: 25 acres • Shelterwood Removal: 9 acres • Clearcut: 8 acres <u>Uneven-aged Management</u> • Selection: 35 acres **Total Harvesting: 132 acres**	Would have the lowest potential for even-aged management (20 average annual acres) <u>Even-aged Management</u> • Thinning Harvest: 10 acres • Shelterwood Regeneration: 5 acres • Shelterwood Removal: 3 acres • Clearcut: 2 acres <u>Uneven-aged Management</u> • Selection: 15 acres **Total Harvesting: 35 acres**	Would have intermediate potential for even-aged management (51 average annual acres) <u>Even-aged Management</u> • Thinning Harvest: 29 acres • Shelterwood Regeneration: 12 acres • Shelterwood Removal: 6 acres • Clearcut: 4 acres <u>Uneven-aged Management</u> • Selection: 36 acres **Total Harvesting: 87 acres**

3.1 CHAPTER 3 – ENVIRONMENTAL CONSEQUENCES

3.1.1 Introduction

Chapter 3 provides a summary of the potential physical, biological, social, and economic effects from the alternatives presented in Chapter 2. A detailed disclosure of the affected environment and environmental consequences can be found in Chapter 3 of the FEIS.

Different time scales are used in the effects analysis to provide a temporal context and comparison for the way conditions may change through time as a result of management activities or natural events. Three time frames are used: 1) temporary, 2) short-term, and 3) long-term. Unless otherwise stated, temporary effects are generally expected to last anywhere from 0 to 3 years. Short-term effects can include temporary effects but can last up to 10 to 15 years, or the period of time between Forest Plan revisions. Long-term effects generally last longer than 10 to 15 years, or begin to occur after the first 10 to 15 year planning period. Environmental effects are disclosed assuming full compliance with the Forest-wide and management area standards and guidelines described in the revised Forest Plan.

Sections in Chapter 3 of the Executive Summary begin with a brief discussion of the issues (issue statement) associated with each resource. The issue statements provide a detailed discussion of the issues derived during public participation in the planning process summarized in Chapter 1. The environmental consequences are then provided for each alternative under the indicator that provides a meaningful measurement of the effects associated with the issues.

3.1.2 Soil

Issue Statement
Concern is focused on the extent to which soil quality will be maintained under the revised Forest Plan.

Environmental Consequences
Under all alternatives it is anticipated that soil resources will be protected. The effects of implementing one alternative over another would be minimal because soil resource Plan standards and guidelines, and other measures for protecting soil quality, effectively minimize soil quality impacts. The opportunity for human error exists however, so the discussion of direct and indirect effects considers the potential adverse effects management actions could have, as a function of the amount of ground disturbing activities that could occur.

Indicator 1: Acres in Management Area Allocations Most Subject to Ground Disturbing Activities That Decrease Soil Quality
Table ES-3 displays the acres in MA allocations most subject to ground disturbing activities for each alternative. Alternative 1 would have the highest acreage of lands most subject to soil disturbance (15,624 acres, or 95 percent of the FLNF), Alternative 2 would have the lowest acreage (11,380 acres, or 70 percent of the FLNF), and Alternative 3 would be intermediate in acreage (13,584 acres, or 83 percent of the FLNF). This indicates that the risk of soil disturbance (including erosion, rutting and compaction), the need for erosion control measures, the risk of an erosion control measure failing, and the risk of soil quality reductions would be highest for Alternative 1, lowest for Alternative 2, and intermediate for Alternative 3.

Indicator 2: Acres in Management Area Allocations Subject to Ground Disturbing Activities, With a High Erosion Hazard
Alternative 1 has the highest acreage of lands with a high erosion hazard rating (332 acres), Alternative 2 has the lowest acreage (152 acres), and Alternative 3 is intermediate in acreage (226 acres). This indicates the risk of soil erosion is highest for Alternative 1, lowest for Alternative 2, and intermediate for Alternative 3. Acreage differences, however, are extremely small, rendering them negligible on a landscape scale such as the FLNF.

Table ES-3: Acres in Management Area Allocations Most Subject to Ground Disturbing Activities

Alternative	Acres (percent)
1	15,624 (95%)
2	11,380 (70%)
3	13,584 (83%)

Notes:
[1] Percents in parentheses indicate the percent of the FLNF acres in Management Area Allocations allowing ground disturbing activities
[2] The Management Area Allocations most subject to ground disturbing activities are: Grassland for Grazing, Grassland for Wildlife, Shrubland, Northern Hardwood, and Oak Hickory.

3.1.3 Water and Fisheries

The issue statements and indicators for water and fisheries resources are displayed separately for each resource. They are closely related, however, so the environmental consequences for water and fisheries resources are analyzed together.

Water

Issue Statement

Concern is focused on the extent to which water quality will be maintained and/or improved, and riparian area conditions (soil erosion and vegetation) will be improved under the revised Forest Plan.

Fisheries

Issue Statement

Concern is focused on the extent to which fish habitat will be maintained and enhanced under the revised Forest Plan.

Environmental Consequences

Under all alternatives it is anticipated that water, riparian, and fisheries resources would be protected and the effects of implementing one alternative over another would be minimal because protection measures would minimize the impacts to these natural resources. This would be the case over the short and long-term, until desired future conditions are met. The opportunity for human error exists however, so the discussion of direct and indirect effects considers the potential adverse effects management actions could have as a function of the amount of ground disturbing activities permitted.

Indicator 1 (Water): Acres in Management Area Allocations Most Subject to Ground Disturbing Activities that Could Impact Water Quality and Riparian Areas

Indicator 1 (Fisheries): Acres in Management Area Allocations Most Subject to Ground Disturbing Activities that Could Impact Fisheries Habitat
There are differences between alternatives in the acreage of MA allocations most subject to ground disturbance (Table ES-3). Alternative 1 would have the highest acreage of lands most subject to ground disturbance at approximately 15,624 acres. Alternative 2 would have the lowest acreage affected at 11,380, and Alternative 3 would be between those two figures at 13,584. This indicates that the risk of ground disturbance, including soil erosion and surface runoff, loss of riparian vegetation, and the risk of water quality and fish habitat reductions from turbidity, sedimentation of fish habitat, and nutrient enrichment would be highest for Alternative 1 and lowest for Alternative 2.

3.1.4 Air

Issue Statement
Concern is focused on the extent to which management activities on the FLNF would affect local and regional air quality. Additionally, there is concern about the impacts to forest resources and air quality from air pollution transported to the FLNF from near and distant sources.

Environmental Consequences
The direct and indirect effects for all alternatives would be minor, and with only slight variations between alternatives. Natural resource management activities such as timber harvest, road construction and maintenance, motorized recreational use, and minerals development can generate ozone, carbon monoxide, and particulate matter. The amounts, however, would be negligible in terms of impacts to the air quality and would not meaningfully vary by alternative.

Indicator: Potential Amount of Particulate Emissions (tons per year) Generated from Prescribed Fire
The potential impacts from prescribed fires are not expected to vary by alternative due to the small acreage differences in management area allocations allowing prescribed fire. Under all alternatives, prescribed fire is expected to have minimal impacts to local and regional air quality.

3.1.5 Vegetation

Concern is focused on the composition and structure of forest vegetation provided on the FLNF as a result of historical management strategies and proposed future management under the revised Forest Plan and its alternatives. This section covers two components of the vegetation topic:

- Major Forest Communities
- Non-Native Invasive Species

Major Forest Communities

Issue Statement
Public concern with major forest communities is focused on what tree species and forest ages will provide adequate forest structure and biodiversity while providing the social and economic needs of people.

The major forest communities are broadly defined groupings of the forest types used to classify lands on the FLNF during field inventories. These communities indicate the dominant tree species present, but may not always reflect all of the species present in a forested stand. There are four major forest communities on the FLNF discussed in this analysis: 1) forests dominated by mesic hardwoods, 2) forests dominated by oak, 3) forests dominated by softwoods, and 4) forests dominated by aspen. These major forest communities are analyzed using indicators related to their abundance, age class distribution, and structure to evaluate alternatives. The current abundance of these communities compared to ecological tendencies is displayed in Table ES-4.

Table ES-4: Current composition of the FLNF by major forest community.

Forest Community	Current Amount	Current Status	Potential Abundance[1]
	acres	percent	Percent
Mesic hardwood forest	2,745	17%	63-73%
Oak-hickory & oak-pine forest	2,697	17%	25-34%
Softwood forest	3,029	19%	1-2%
Aspen	239	1%	<1%
Open land	7,367	45%	1%

[1] Abundance, or ecological tendencies, of potential natural vegetation represents an approximate range.

Environmental Consequences

Indicator 1: Amount of Each Major Forest Community (Composition and Abundance)
Ecological tendencies based on analysis of pre-European settlement tree data, along with ecological characteristics of the land based on ELT data, estimate the direction and magnitude by which forest community composition and abundance is expected to change over time on National Forest System lands. The Forest Service has identified composition objectives (Table ES-5) that move the Forest closer to these ecological tendencies than it is now, given the constraints of existing and historical land uses. In addition, the Forest Service has the opportunity under each alternative to work toward relative proportions of the major forest types that are closer to those expected based on ecological tendencies.

Table ES-5: Proposed composition objectives for the revised Forest Plan.

Forest Type	Percent of FLNF
Mixed Hardwoods (Oak and Northern Hardwood)	35-50%
Softwoods	6-10%
Aspen	1-2%

Mesic Hardwoods
Forest composition, and therefore abundance of mesic hardwoods, is not likely to change very much over the short-term under all alternatives, and so would remain at the low end of the desired composition objective range. Over the long-term, however, all alternatives appear likely to shift the composition of mesic hardwoods and oak combined to within the desired composition objective range. Based on this analysis, all alternatives come a little closer to the proportion of mesic hardwoods expected based on ecological tendencies of the forested land on the FLNF.

Over the long-term, Alternative 1 provides the least amount of mesic hardwood forest of all the alternatives. This Alternative is also likely to lead to mesic hardwoods having a lower abundance than oaks across the FLNF landscape, which would generally be outside the ecological tendencies for this forest community. By managing this community outside ecological tendencies, this Alternative is less likely to sustain the diversity and productivity of mesic hardwood forests.

Alternative 2 provides the largest amount of mesic hardwood forest of all the alternatives over the long-term. In comparing Alternative 2 with the ecological tendencies, this Alternative increases mesic hardwoods to four times the area represented by oak, which is higher than the ecological tendency for the relative proportion of mesic hardwoods to oak.

Alternative 3 provides an intermediate amount of mesic hardwood forest when compared to the other alternatives. Compared to Alternative 1 and 2, Alternative 3 comes closest to maintaining the proportional relationship of mesic hardwoods to oak predicted by ecological tendencies, with mesic hardwoods about 1.7 times as abundant as oaks.

Oak-Hickory and Oak-Pine Forest
Forest composition, and therefore abundance of oak-dominated forests, is not likely to change very much over the short-term under all alternatives, and is likely that the abundance of oak stands would remain at the low end of the desired composition objective range. Over the long-term, however, all alternatives appear likely to shift the composition of oak and mesic hardwoods combined to within the desired composition objective range.

Over the long-term, Alternative 1 provides the greatest amount of oak-dominated forest of all the alternatives. Oak-dominated forests are close to or within the expected ecological tendencies for this forest community. This Alternative would help to ensure that much of the diversity in composition, structure, and processes associated with this forest community can be maintained or restored. As noted for mesic hardwoods, however, Alternative 1 maintains a higher proportion of oak-dominated forest than mesic hardwoods, which is a different proportional relationship than would be expected under more natural conditions.

Alternative 2 is expected to provide the least amount of oak-dominated forest of all the alternatives by reducing the amount of oak-dominated forest to half of what currently exists. Looking at ecological tendencies, Alternative 2 maintains oak-dominated forests well below what would be expected, and its proportional relationship with mesic hardwoods is less than would be expected. The under-representation of oaks in this Alternative leads to concerns that it will be difficult to maintain biodiversity and ecosystem processes associated with oak-dominated forest communities.

Alternative 3 is expected to provide intermediate abundance of oak-dominated forests compared to the other two alternatives. Compared to Alternative 2, Alternative 3 has fewer oak stands in management area allocations where management is not likely to perpetuate these types, although more than in Alternative 1. Alternative 3 comes closest to maintaining the expected proportional relationship between oaks and mesic hardwoods predicted by ecological tendencies. Two-thirds of plantation forests are also likely to shift toward oaks in Alternative 3, since they are allocated to MAs that support this type. While not as effective as Alternative 1, Alternative 3 would, over time, have effects similar to Alternative 1 in providing for the diversity and productivity of oak-dominated forest communities.

Softwood Forest

The abundance of softwood forest is expected to decline and approach the desired composition objective range under all alternatives over the short-term. Over the long-term, all alternatives appear likely to shift the abundance of softwoods to within the desired composition objective range when considering all of the lands on the Forest. This amounts to a reduction in the current amount of softwood forests on the FLNF.

In Alternative 1, the long-term composition of softwoods tends toward the high end of the composition objectives, but is reduced by almost 50 percent compared to current abundance on the Forest.

In Alternative 2, the long-term composition of softwoods tends toward the low end of the composition objectives, and reduces the current abundance of softwoods by two-thirds. This alternative most reflects the expected ecological tendency of the FLNF landscape by providing the lowest amount of softwood forest.

In Alternative 3, the long-term composition of softwoods tends toward the middle of the composition objectives, and reduces the current abundance of softwoods by more than 50 percent.

Aspen

All alternatives will maintain aspen at levels greater than would be expected by ecological tendencies. Perpetuation of aspen is an important objective noted in the revised Plan, and so the objective and potential future composition across the alternatives reflect the desire to keep this forest community at higher levels than would be expected naturally. Alternatives 1 and 3 would increase the proportion of aspen toward the upper end of the desired range of objectives at three percent. In Alternatives 1 and 3, opportunities to manage existing aspen stands and create new stands are much greater than under Alternative 2. Alternative 2, in contrast, provides fewer opportunities for managing the aspen forest community.

Indicator 2: Proportion of each Major Forest Community in Various Age Categories (Age Class Distribution)

The effects of alternatives in achieving age class distribution objectives over the short-term tend to be less important than long-term effects, because the development of a desired age class distribution involves long-lived tree species and regulation over many decades. Consequently, long-term effects (150 years) will be emphasized in this discussion.

Estimates of age class distributions discussed below are based on analysis of lands within the Oak Hickory MA that are suitable for harvesting and projected to use even-aged silvicultural systems only. Lands unsuitable for timber harvesting due to capability or management area allocation are expected to be dominated

by the mature and old age classes, while lands managed for grassland and shrubland habitat are expected to either be dominated by herbaceous vegetation or the regenerating age class of trees. Lands managed using uneven-aged silvicultural systems are expected to include a variety of age classes.

Mesic Hardwoods

Alternative 1 has the highest proportion of mesic hardwood forest (51%) projected for even-aged management. About half of the mesic hardwood stands on the Forest would, over the long-term, have a balanced age class distribution in the vicinity of the desired age class objectives. Age class distribution for mesic hardwood stands managed using even-aged silviculture is likely to be close to the desired objectives over the long-term and would favor the regenerating age class compared to the old age class more than the other alternatives.

Alternative 2 has the smallest proportion of mesic hardwood forest projected for even-aged management (6%). Only a very small proportion of mesic hardwood stands on the Forest would have an age class distribution balanced to the desired objectives, with the age class distribution of the remainder of this forest community governed by natural processes. Alternative 2 places a strong emphasis on older age classes and areas where age classes are not regulated, and provides fewer opportunities to manage for the younger age classes.

Alternative 3 has an intermediate proportion of mesic hardwood forest projected for even-aged management (35%). About a third of the mesic hardwood forest stands on the Forest would have an age class distribution balanced to the desired objectives, with the age class distribution of the remainder of this forest community governed by natural processes. Alternative 3 appears to strike more of a balance in terms of age class distribution of mesic hardwoods across the Forest, when compared to the other alternatives.

Oak-Hickory and Oak-Pine Forest

Alternative 1 has the largest proportion of oak-hickory and oak-pine forest projected for even-aged management (58%). More than half of the oak stands on the Forest would, over the long-term, have a balanced age class distribution in the vicinity of the desired age class objectives. Alternative 1 appears to offer the greatest opportunity to maintain a balance of age classes that is closest to the revised Plan objectives for oak-dominated forests projected for even-aged management. There is an equal balance between stands in the younger age classes and stands in the older age classes on average, with more consistency in the younger age classes over the long-term.

Alternative 2 has the smallest proportion of oak-dominated forest projected for even-aged management (5%). This proportion is substantially lower than other alternatives, and thus only a very small proportion of oak stands on the Forest will be managed toward an age class distribution balanced to the desired objectives, with the age class distribution of the remainder of this forest community governed by natural processes, or managed using uneven-aged silviculture. Alternative 2 allocates the highest proportion of oak-dominated forests to management areas that may not sustain oak. While the FLNF is ideally suited to experiment with partial cutting or selection methods that might perpetuate oak without creating definable stands of young trees, as even-age methods do, it may be risky to place such a high proportion of the Forest's oak stands in MAs where there is uncertainty regarding their persistence.

Alternative 3 has an intermediate proportion of oak-dominated forest projected for even-aged management (10%). This proportion is double that under Alternative 2, but still substantially less than under Alternative 1. As a result, only ten percent of the oak stands on the Forest will be managed toward an age class distribution balanced to the desired objectives, with the age class distribution of the remainder of this forest community governed by natural processes or managed using uneven-aged silviculture. While Alternative 3 elicits the same concern as Alternative 2 regarding potential loss of oak

forests over the long-term, Alternative 3 does a better job than Alternative 2 at contributing acres of even-aged oak stands to the regenerating age class. Alternative 3 is also more successful at meeting age class objectives than the other two alternatives on the acres where those age class objectives are applied.

Softwood Forest

While there is variation across alternatives in the proportion of softwood stands projected for management using even-aged silviculture systems, this variation does not result in differences among alternatives in achieving an age class distribution balanced to the desired objectives. All alternatives are successful in this regard with Alternative 3 stabilizing more quickly.

Softwood stands outside of the Oak Hickory MA are allocated to MAs where natural processes or uneven-aged silvicultural systems dictate age class distributions that vary by alternative. Over the long-term, age class distribution of softwoods stands will be associated predominantly with native softwood stands (white pine and hemlock), since plantations of softwoods over the long-term will be replaced by native hardwood vegetation. Therefore, effects of alternatives on the older age classes of native softwoods are discussed below by alternative.

Under Alternative 1, 13 percent of native softwood stands are allocated to management areas that focus on older age classes or continuous forest canopy where age class is not managed. This amount is substantially lower than the other two alternatives, and represents two percent of the Forest.

Under Alternative 2, 82 percent of native softwood stands are allocated to management areas that focus on older age classes or continuous forest canopy. This amount is substantially higher than the other two alternatives, and represents ten percent of the Forest.

Under Alternative 3, 60 percent of native softwood stands are allocated to management areas that focus on older age classes or continuous forest canopy. This amount is intermediate between the other two alternatives, and represents seven percent of the Forest.

Aspen

Alternative 1 provides the most opportunities to manage age class distribution for this forest community since two-thirds of existing aspen stands are within the Oak Hickory MA, and because this MA allocation is substantially greater in this Alternative. Outside of the Oak Hickory MA, the proportion of aspen stands where older age classes would be emphasized through natural processes or limited management is less than one percent. Aspen can also be maintained within the Northern Hardwood MA, and when combined with the Oak Hickory MA these two MAs include about 65 percent of existing aspen forest.

Alternative 2 provides the fewest opportunities for management of aspen compared to the other two alternatives with only one percent of existing stands of this community occurring within the Oak Hickory MA. Outside of the Oak Hickory MA, Alternative 2 allocates the highest proportion (63 percent) of aspen stands to management designations that emphasize natural processes or limited management. The Oak Hickory and Northern Hardwood MAs combined include about 27 percent of existing aspen acres, still substantially less than under Alternatives 1 and 3.

Alternative 3 offers fewer opportunities for management of aspen than Alternative 1, with less than half of existing aspen acres within the Oak Hickory MA. Outside of the Oak Hickory MA, the proportion of aspen stands where older age classes would be emphasized through natural processes or limited management is 23 percent. The Oak Hickory and Northern Hardwood MAs combined include about 73 percent of existing aspen acres.

Indicator 3: Acres of Timber Harvest Treatments (Forest Structure)
All alternatives tend to improve forest structure over the long-term because they make limited use of the more intense single cohort harvest methods (clearcutting) and provide more opportunities to manipulate forest structure through management. The ability to manipulate forest structure is important on the FLNF because it can accelerate forest recovery from land use history by adding structure that is currently missing, and thereby benefit plant and animal species and their habitats.

Alternative 1 would provide moderate opportunities to increase within-stand complexity over the long-term. About half of the acreage within forested management areas would experience harvesting over the long-term, which is more than under other alternatives. This provides abundant opportunities to manipulate structure through active timber management, which can help to improve the structural characteristics.

Alternative 2 provides the Forest with minimal ability to increase within-stand complexity over the long-term through active timber management. The availability and proposed amounts of regeneration harvest cutting methods provide a mix of management practices to improve stand level structural diversity, but over a much smaller number of acres than other alternatives. With the low harvest levels under this alternative, it would likely take a much longer time for structural diversity to increase substantially.

Alternative 3 would provide moderate to high levels of opportunities to increase within-stand complexity over the long-term. While about 30 percent of the forested lands would be managed using active timber harvesting, a diversity of methods and balance among even-aged and uneven-aged methods would occur under this alternative, more so than under Alternatives 1 and 2. Alternative 3 would be more effective at improving structural diversity over a shorter timeframe than the other alternatives.

Non-Native Invasive Species

A non-native invasive species (NNIS) is an organism that has been purposefully or accidentally introduced outside its original geographic range, and that is able to proliferate and aggressively alter its new environment, causing harm to the economy, environment, or human health.

Issue Statement
Public concern is focused on the need to evaluate current management direction for NNIS. At this time, the list of NNIS the FLNF tracks includes only plants; it could potentially include animals, as well, if any non-native invasive animals became of concern. Concern is focused on the need to address maintenance and viability of native plant and animal populations, and prevention and control of non-native invasive species, including the effects NNIS management will have on threatened, endangered, and sensitive (TES) species.

Environmental Consequences
Indicators 1, 2, and 3: Potential to Facilitate the Establishment, Growth, and Dispersal of NNIS
Effects from all alternatives would include increased dispersal of NNIS into areas not yet infested, creation of additional suitable sites for the infestation of NNIS, and facilitation of their establishment and growth. NNIS associated standards and guidelines and other measures for minimizing the spread of NNIS are effective when implemented. Under all alternatives, it is anticipated that the spread of NNIS will be minimized and the effects of implementing one alternative over another would be minimal. The opportunity for human error exists, however, and NNIS will still disperse by means other than human activity, and will still be able to take advantage of the increased soil disturbance, pathways for dispersal, and light that result from management activities and recreational use of the Forest.

The three indicators with the potential to facilitate the establishment, growth, and dispersal of NNIS are combined because of their interconnected relationships. The short and long-term impacts from recreational use

and management activities that could cause ground disturbance, increase pathways of dispersal, and allow more light to reach the ground are lowest in Alternative 2, highest in Alternative 1, and intermediate in Alternative 3. This suggests that the protection and maintenance of biodiversity and conservation of ecosystems would be most supported by Alternative 2 and least supported by Alternative 1.

3.1.6 Wildlife and Wildlife Habitat

Issue Statement

Public concern is focused on the types and mixtures of habitats on the Finger Lakes National Forest (FLNF) that will provide diversity of terrestrial wildlife species, while meeting other resource objectives. Public concern includes debate about the appropriate distribution and amount of three vegetation conditions: grassland, shrubland, and forest habitats. These vegetation conditions provide a majority of the options and diversity of wildlife habitat that are available on the FLNF.

Environmental Consequences

The FLNF provides habitat for about 200 species of wildlife, including 10 species of fish. It also includes more than 300 species of vascular plants. The mixture and diversity of vegetation conditions and habitats found on the FLNF contribute to the continued presence of animal species found there.

Indicator 1: Acres of Grassland Habitat

The overall availability of grassland is almost the same for the three alternatives, ranging from 5,710 to 5,780 acres (or approximately 35 percent of the FLNF) predominately located in the northern portions of the FLNF. Thus, all alternatives provide positive contributions to viability and persistence of grassland-dependent species that occur on the Forest. The principal difference among the alternatives is in the relative acreage where grazing is or is not permitted. The methods employed for maintenance of grasslands, specifically, grazed versus un-grazed maintenance, directly affect the quality of that grassland habitat. Grazed grasslands tend toward a higher percentage of unpalatable grasses and forbs that create a less-dense and less-uniform vegetation cover than in the un-grazed grasslands. Wildlife species, like grasshopper sparrow, eastern meadowlark (grassland habitat MIS), meadow vole, meadow jumping mouse, garter snake, and leopard frog would be provided with a substantial acreage of preferred habitat that is well distributed across the FLNF, especially the northern portions.

Alternative 1 proposes the greatest acreage (5,400 acres) of grazed grassland, and the smallest acreage (310 acres) of un-grazed grasslands. These acreages totaled together are less than the MA allocation to the Grassland for Grazing Management Area because they assume existing inclusions of forest land will be retained. This alternative is more closely reflective of the Finger Lakes region of central New York, with a higher percentage of grasslands being actively grazed. Wildlife species preferring the less dense, grassy conditions that result from grazing will find greater opportunities than with other alternatives. These species include garter snake, savannah sparrow (grassland habitat MIS), grasshopper sparrow, and meadow vole.

Alternatives 2 and 3 provide an identical combination and distribution of grasslands: 5,100 acres of grazed grassland and 680 acres of un-grazed grassland. These alternatives differ from Alternative 1 by proposing greater amounts of un-grazed grasslands. Spatially, Alternatives 2 and 3 reduce the number of isolated, grassland habitat parcels in comparison to Alternative 1, while shifting focus of grassland management toward the northern portions of the FLNF.

Indicator 2: Acres of Shrubland Habitat

The alternatives provide limited differences in the amount and distribution of shrubland habitat. All alternatives provide for shrubland habitats on between 7 and 9 percent of the FLNF, and thus provide positive contributions to viability and persistence of shrubland-dependent species using the FLNF. Wildlife species, like eastern American toad, eastern towhee, common yellowthroat (shrubland

habitat MIS), white-tailed deer, and red fox would be provided with a substantial acreage of preferred habitat that is well distributed throughout the FLNF, especially along the edges and in the Forest's northern portions.

Alternative 1 allocates the most acres to the Shrubland MA (107 acres, 13% of the Forest), compared to Alternative 2 (1,268 acres, 8% of the Forest) and Alternative 3 (1,421 acres, 9% of the Forest). Differences in the actual availability of shrubland habitat are much smaller, ranging from 1,400 acres (9%) in Alternative 1 to 1,100 acres (7%) in Alternative 2.

Except for a couple small shrubland parcels proposed for grassland management, the shrubland acres subtracted from Alternative 1 are those that have reverted through natural succession to wooded conditions and no longer appear as shrubland in the vegetation inventories. Alternative 1 provides slightly greater benefit to wildlife species preferring shrubland conditions than do the other alternatives. This alternative proposes to maintain in the Shrubland MA approximately 700 acres that are currently woodland habitat.

Alternative 2 offers the least availability of shrubland habitat (1,100 acres, 7% of the Forest), and reallocates the most acres from the Shrubland MA to woodland management. Shrubland parcels proposed for reallocation to woodland management in Alternative 2 occur primarily along the Hector backbone.

Alternative 3 offers 100 acres more shrubland habitat (1,200 acres, 8% of the Forest) than Alternative 2, but 200 acres less than Alternative 1. Shrubland parcels proposed for reallocation to woodland management in Alternative 3 occur primarily in the northern portion of the FLNF.

Indicator 3: Acres of Contiguous, Mature Forest Habitat

All three alternatives provide for a persistence and mixture of all forest types currently present on the FLNF. Common wildlife species preferring these different forest types are likely to persist in viable numbers on the FLNF under each alternative. None of the alternatives proposes closing (or changing) roads through the Forest; consequently, discussion of habitat connectivity pertains to species for which Forest roadways are not barriers (such as large mammals or forest birds). Some land that will develop over time into old forest habitat is proposed under each alternative, although the amounts and distributions do vary.

Alternative 1 offers a slightly lower emphasis on mature and older forest communities, but in the short-term, these differences are negligible. This alternative also provides the least emphasis on lands that will develop old growth characteristics, although old growth likely represents no advantage for wildlife in comparison to mature and older forest communities. The greater difference is that the areas that will develop into older forest are more scattered and provide less contiguity. Thus, the MIS for contiguous, mature forest habitat (black-throated blue warbler) and other species that rely on or use this habitat (such as scarlet tanager, ovenbird, gray fox, and spotted salamander) would receive the least benefit from Alternative 1.

Alternative 2 allocates the greatest amount of land to MAs that will develop into old forest, the greatest acreage managed under uneven-aged silvicultural methods, and the greatest connectivity and contiguity of the combined old and mature forest communities. Consequently, this alternative provides the greatest benefit to the wildlife species that rely on or use contiguous, mature forest habitat.

Under Alternative 3, lands that develop into old forest would be centrally located, with limited occurrence at the northern and southern extremities of the Forest. This alternative provides habitat connectivity among areas of old forest development similar to Alternative 2, but provides less connectivity than Alternative 2 between areas managed with uneven-aged silvicultural methods and those managed for older forest. Species that rely on or use contiguous, mature forest habitat receive greater benefit under Alternative 3 than under Alternative 1, but less than under Alternative 2.

Indicator 4: Acres of Habitat Available for Management Indicator Species and Their Population Trends

Management Indicator Species (MIS) are vertebrate or invertebrate species selected for monitoring habitat conditions on the Forest, because their population changes are believed to indicate the effects of management activities. Table ES-6A presents a summary of population and habitat trends for MIS selected for the revised Forest Plan.

All three alternatives provide availability of each of the important habitat types and conditions on the FLNF. MIS would find suitable conditions under each alternative, both in the short and long-term. Common wildlife species of the FLNF and the FLNF vicinity that rely upon or use these same habitat conditions are likely to persist in viable numbers, regardless of which alternative is selected. Five of the MIS for the revised Forest Plan are linked to major wildlife habitats that the Forest Service identified as indicators for the FLNF: grassland, shrubland, and contiguous, mature forest. The associated MIS are savannah sparrow, bobolink, and eastern meadowlark (grassland); common yellowthroat (shrubland); and black-throated blue warbler (contiguous, mature forest). Availability of habitat for these MIS under each of the alternatives is discussed separately under Indicators 1, 2, and 3, above. Three other MIS for the revised Forest Plan are linked to other important habitat types on the FLNF: gray squirrel (oak-hickory), ruffed grouse (aspen), and chestnut-sided warbler (young deciduous trees (age zero to nine years)).

The availability of oak-hickory habitat should increase slightly over the current condition due to natural succession of some softwood stands, but does not vary among alternatives over the short-term. Long-term availability of oak-hickory would be greatest under Alternative 1, increasing marginally from the short-term to 3,300 acres (20%). Under Alternative 2, the projected availability of oak-hickory drops to 1,500 acres (9%), about half that of the short-term; Alternative 3 is intermediate, declining over the long-term to 2,500 acres (15%). Thus, the associated MIS (gray squirrel) and other species that rely on this habitat receive equal short-term benefit from each alternative. Over the long-term, these species receive the greatest term benefit from Alternative 1, least from Alternative 2, and an intermediate level of benefit from Alternative 3.

Table ES-6: Trends for populations (Pop) of FLNF Management Indicator Species (MIS) and the habitats (Hab) they represent, for the northeastern region, New York State, and the FLNF.

MIS Species	Northeast region		New York		FLNF[4]	
	Pop	Hab	Pop	Hab	Pop	Hab
Savannah sparrow	↓*[1]	↓[2]	↓*[1] ↔[3]	↓[2]	?	↔
Bobolink	↔[1]	↓[2]	↔[1,3]	↓[2]	?	↔
Eastern meadowlark	↓*[1]	↓[2]	↓*[1,3]	↓[2]	↓?	↔
Common yellowthroat	↔[1]	↓[2]	↔[1,3]	↓[2]	?	↓
Black-throated blue warbler	↔[1]	↑?	↔[1,3]	↑?	?	↑
Chestnut-sided warbler	↔[1]	↓[2]	↔[1,3]	?	↔	↓
Ruffed grouse	↓*[1]	↓[2]	↓*[1,3]	?	↓?	↓
Gray squirrel	?	?	?	?	↔	↔

Sources:
[1] BBS (North American Breeding Bird Survey: Sauer et al. 2003)
[2] PIF (Partners in Flight physiographic area 15- Lower Great Lakes Plain: Dettmers and Rosenberg 2003), PIF (Partners in Flight physiographic area 24 – Allegheny Plateau: Robertson and Rosenberg 2003)
[3] NYDEC (2005)
[4] Smith and Brown (1994), Toth (2000), USDA (2004d), USDA (unpublished data)

Trend codes:
? = uncertain
↑ = increase in abundance/quality
↔ = stable
↓ = moderate decrease in abundance/quality
↓* = significant decrease in abundance/quality

Alternative 1 provides the most available habitat for MIS that rely on aspen and young deciduous tree habitats over the short-term. Alternative 1 would provide abundance of aspen at the upper limit (3% of the FLNF) of the desired composition range for this species. The average acreage of young deciduous trees at any given time would be about 330 acres, approximately three times that of Alternative 3 and eight times more than under Alternative 2.

Thus the MIS for aspen (ruffed grouse) and young deciduous trees (chestnut-sided warbler), as well as the other wildlife species that rely on or use these habitat communities, would benefit most from Alternative 1.

Alternative 2 would provide slightly less emphasis on aspen and substantially less young deciduous tree habitat than Alternatives 1 and 3. Projected short-term (20 years) abundance of aspen is about 150 acres, compared to 380 to 480 acres for the other two alternatives. Average abundance of young deciduous trees would be only about 40 acres under Alternative 2, which is 12 percent as much as under Alternatives 1, and 36 percent as much as under Alternative 3. Ruffed grouse, as well as the other wildlife species that rely on or use these habitat communities, would benefit least from Alternative 2.

Alternative 3 (like Alternative 1) would provide abundance of aspen at about 2 percent, approaching the upper limit of the desired composition range for this species in the short-term. This alternative provides an intermediate emphasis on young deciduous tree habitat of about 110 acres over the short-term. Ruffed grouse and other wildlife species that rely on or use aspen, would receive the same benefit as Alternative 1. Those that depend on or use young deciduous tree habitat would receive intermediate benefit from Alternative 3: less than under Alternative 1 but more than under Alternative 2.

3.1.7 Threatened and Endangered Species

The Biological Evaluation for this FEIS (FEIS, Appendix E) presents the detailed analysis of potential effects of the revised Forest Plan on six federally-listed threatened and endangered (TE) animal species and one plant species for the FLNF: gray wolf (*Canis lupus*), eastern cougar (*Felis concolor cougar*), Canada lynx (*Lynx canadensis*), Indiana bat (*Myotis sodalis*), bald eagle (*Haliaeetus leucocephalus*), bog turtle (*Clemmys muhlenbergii*), and Leedy's roseroot (*Sedum integrifolium* ssp. *leedyi*). The U.S. Fish and Wildlife Service (USFWS) identified two species, Indiana bat and Leedy's roseroot, as occurring in the FLNF area, although neither species is known to occur on the Forest. The BE concludes that only one species, the Indiana bat, may be present on the FLNF and may be affected by management actions authorized by the revised Forest Plan. The BE further concludes that implementation of the revised Forest Plan, under any of the proposed alternatives, may affect, but is unlikely to adversely affect, the Indiana bat.

The BE also concludes that implementation of the revised Forest Plan, under any of the proposed alternatives, will have no effect on the other listed species. Should the status of any of these species change, the Forest Service will reinitiate consultation with the USFWS. The FLNF does not include designated critical habitat or proposed critical habitat for any TE species, including the Indiana bat.

Issue Statement

Public concern is focused on ensuring that federally-listed, threatened and endangered species are considered during development of the revised Forest Plan and during project implementation. The Indiana bat is the one federally-listed, endangered or threatened species analyzed in this section.

Environmental Consequences

Indicator: Acres Allowing Management Activities That May Affect Habitat or Population Trends of Indiana Bats

The Forest Service's responsibilities pursuant to the Endangered Species Act (ESA) and compliance with ESA requirements are not affected by the alternatives. Forest-wide management direction relative to the protection, conservation, and recovery of TE species is also not affected by the alternatives. Specific activities most likely to affect Indiana bats, directly or indirectly, and adversely or beneficially, are timber and vegetation management, particularly timber harvest and firewood cutting for commercial or personal use. Other activities, such as management and maintenance of recreational sites, construction and maintenance of roads and trails, removal of hazard trees, wildlife habitat management, prescribed fires, special uses, visual quality

management, and protection of cultural resources may alter habitat over smaller areas.

Management activities on the FLNF most likely to affect Indiana bats stem from vegetation or timber management in areas where Indiana bats are likely to occur. Potential adverse effects include direct affects from killing or injuring bats during removal of or damage to an occupied roost tree or snag, or indirect effects from reducing quantity or quality of potential roosting habitat by removing existing or potential roosting trees or snags. Potential beneficial effects include creation of openings or patches in which canopy closure is reduced, thereby enhancing the mosaic of suitable roosting and foraging habitats in close proximity to each other, and identification and retention of trees likely to provide suitable roost trees now and in the future, thereby increasing the availability of such structures.

Although Indiana bats can exploit a variety of forest types, oak hickory is a preferred type. The three alternatives provide a range of land allocated to the two Management Areas (Oak Hickory MA and Northern Hardwood MA) that focus on timber management and a range of suitable acres on which commercial timber management is allowed.

The alternatives differ in the amount they allocate to the Oak Hickory and Northern Hardwood MAs and the amount of potential harvest activities that may take place in the short-term (20 years). The likelihood for incidental take of Indiana bats on the FLNF is extremely low. If Indiana bats occur on the FLNF, they do so in extremely low numbers, and the overall availability of suitable roosting or foraging habitat on the Forest and in the Central New York region (including public and private lands) is high. The low abundance of Indiana bats on the FLNF and the apparent availability of roosting and foraging habitat on the Forest and across the region in general imply that the increased level of opportunity for creating or enhancing these habitats may provide little or no additional benefit to Indiana bats in the short-term. Although the likelihood for incidental take of Indiana bats, for reducing the quality of habitat by reducing the availability of roosting trees, or for opportunity to create and enhance roosting and foraging habitat does vary slightly by alternative due to MA allocations, the differences in the potential short-term benefits or negative impacts likely are negligible.

3.1.8 Species of Potential Viability Concern

Species evaluated here include federally-listed threatened and endangered (TE) species, Regional Forester sensitive species (RFSS), and other species of potential viability concern identified during the Species Viability Evaluation (SVE) process. The evaluation of effects to sensitive species is conducted in detail in the Biological Evaluation (FEIS Appendix E).

Issue Statement

Public concern is focused on ensuring the conservation of biological diversity at the species, community, and regional levels. There is public debate regarding the quantity and quality of habitat that the FLNF will provide and maintain. There is also public concern that Forest Service management and FLNF habitat provide for viable well-distributed populations of plants and wildlife, particularly those that are threatened, endangered, or sensitive.

Environmental Consequences

Species Viability Evaluation (SVE) is a qualitative process developed to identify and gather information about vertebrate, invertebrate, and plant species of potential viability concern and for existing TE species and RFSS. The Forest Service conducted the SVE in cooperation with scientists qualified for each taxon (plants, insects, amphibians and reptiles, birds, and mammals) and knowledgeable about local flora and fauna. The SVE process led to the addition of a few new species to the RFSS list for the FLNF in 2003, but it also identified other species that might be of potential viability concern, depending upon the alternative chosen for the revision of the Forest Plan. The final result of the SVE process is an estimated outcome assigned to each species for current conditions and over the short-term (next 15 to 20 years),

both range-wide and for the FLNF. Each viability outcome is an index or relative measure of the environment's capability to support population abundance and distribution. It is not a prediction of population occurrence, size, density, or other demographic characteristics.

Outcomes display a range of increasing risk to viable, well-distributed populations from "A" (lowest viability concern) through "E" (greatest viability concern). Outcome A indicates that habitats are similar, or only slightly degraded from, historical conditions and risks are relatively low. For outcome C, suitable ecological conditions and/or populations are not well distributed, are uncommon, or have been lost, and risk to viability is moderate. Under outcomes D and E, conditions have been so altered that habitats and/or populations are not well distributed, or are at great risk, and therefore the likelihood of loss of viability is high.

The Forest Service identified 25 animals and 16 plants as species of potential viability concern for the FLNF. Of these species, 12 animals and nine plants are not currently listed as RFSS or TE. The remaining species include six animals federally listed as TE, as well as seven plants and seven animals listed as RFSS. Species of particular concern are those with current viability outcomes that are approaching D or E.

Management activities that result from implementation of the alternatives may have a wide variety of predictable effects on species of viability concern. The amount, timing, location, and intensity of activities can influence the degree to which they may impact species and their habitats, and represent potential threats to species. These activities and risks can all cause effects to species through the alteration of habitat composition, structure, and function.

Indicator: Viability Outcomes
All alternatives promote the protection, enhancement, or maintenance of species of potential viability concern, and the habitats on which these species depend. Although the role that the FLNF plays in contributing to the conservation of these species varies by alternative (for example by providing differing amounts and quality of suitable habitat conditions), all alternatives were developed with the premise that risks to viability will be minimized. Analysis undertaken in the Biological Evaluation (FEIS Appendix E) concluded that none of the revised Plan alternatives were likely to result in a trend toward federal listing or loss of viability for RFSS.

It is important to note, that some species may never achieve viability outcomes above D on the FLNF, due to such factors as local distribution of individuals or suitable habitat, life history traits, threats over which the Forest Service has no control (like diseases), or the small size of the FLNF relative to the larger size of a viable population. Although there may be high risks to the viability of some of these species on the FLNF, the Forest Service is contributing to overall regional scales of viability by maintaining or enhancing their habitat.

3.1.9 Recreation Opportunities

Issue Statement
Public concern is focused on differing opinions about the appropriate mix of recreational opportunities and forest settings that should be emphasized on the FLNF. Recreation opportunities can be described along a continuum of settings ranging from highly developed, with dense concentrations of visitors and alterations to the landscape, to more primitive settings where natural forces dominate and evidence of people is hardly noticeable. Some people prefer to recreate in developed settings where services such as constructed camping pads, potable water and toilet facilities are available, while others prefer a more primitive setting where services and facilities are reduced or non-existent. Trails on the FLNF provide a wide range of settings and opportunities. Some people would prefer to utilize the trail system with motorized vehicles such as snowmobiles while others prefer non-motorized travel such as bicycling, horseback riding or hiking. These uses can compete with each other.

Table ES-7: Estimated distribution of desired Recreation Opportunity Spectrum (ROS) classes by alternative.

Desired ROS	Alt. 1	Alt. 2	Alt. 3
	acres (%)	Acres (%)	Acres (%)
Rural (R)	6,566 (40%)	6,156 (37%)	6,156 (37%)
Roaded Natural (RN)	9,276 (56%)	5,442 (33%)	7,646 (47%)
Semi-primitive Motorized (SPM)	0 (0%)	3,821 (23%)	1,398 (9%)
Semi-primitive Non-motorized (SPNM)	597 (4%)	1,020 (6%)	1239 (8%)

There is also a concern that certain resource management actions such as timber management and grazing, and recreation management can have impacts on each other as well as impacts on other resources such as wildlife and plants.

Environmental Consequences

The Recreation Opportunity Spectrum (ROS) inventory system helps characterize the existing condition of the Forest. The ROS is a planning tool used to identify and evaluate the supply of recreation settings on national forests based on actual on-the-ground conditions. Two ROS classes are currently inventoried on the FLNF: Rural and Roaded Natural (55% and 45% of the Forest, respectively. Another way ROS is used is to set management direction (referred to as the "Desired ROS Class").

Indicator 1: Desired Recreation Opportunity Spectrum (ROS) Classes by Management Area
In all alternatives, management activities would move the Forest towards the desired ROS class. Each alternative provides for varying quantities of desired ROS classes across the Forest. The desired ROS class would provide direction for recreation opportunities and settings that may be managed or proposed within the management area. The proportion of management area desired ROS classes for each alternative are summarized in Table ES-7.

Alternative 1 provides for most of the Forest to be managed toward the Rural (40%) and Roaded Natural (56%) Desired ROS classes. There would be no Semi-primitive Motorized class emphasized and Semi-primitive Non-motorized would account for four percent of the forest. Recreation management toward Rural and Roaded Natural settings will emphasize a balance of recreation settings in the built and natural environment. In Alternative 1, desired ROS classes are the most similar to on-the-ground conditions (inventoried ROS classes) among the alternatives.

Alternative 2 provides for more of the Forest to be managed toward the Semi-primitive Motorized (23%) and Semi-primitive Non-motorized (6%) Desired ROS classes than Alternative 1. Rural (37%) and Roaded Natural (33%) Desired ROS classes would continue to make up the majority of the Forest recreation direction, but less than in Alternative 1. Managing recreation opportunities in the Semi-primitive Motorized and Semi-primitive Non-motorized Desired ROS classes reduces developed recreation opportunities. Alternative 2 provides more opportunities to experience remoteness and closeness to nature with semi-primitive character than the other alternatives.

Alternative 3 is similar to Alternative 1 because most of the Forest would be managed in the Rural (37%) and Roaded Natural (47%) Desired ROS classes. Alternative 3 places more emphasis, however, on Semi-primitive Motorized than Alternative 1 and less than Alternative 2. Semi-primitive Non-motorized ROS classes would be emphasized greatest in this alternative. In Alternative 3, the public would have a variety of recreation opportunities with a majority in the Rural and Roaded Natural ROS classes, which emphasize improved access and developed recreation opportunities such as campgrounds and picnic areas.

Indicator 2: Number of Acres Available for Future Trail Development by Trail Activity
The FLNF trail system is managed for multiple-uses. Multiple-use trails provide for various trail users to utilize the same sections of trail. For instance, many of the snowmobile trails on the Forest also provide for cross-country skiing and hiking. Some trails, such as the North Country Trail, provide only for single uses to preserve a

Semi-primitive Non-motorized recreation experience. Under all alternatives, the majority of FLNF lands (69 percent or more) remain open for future trail development. The revised Forest Plan provides management area descriptions that allow and prohibit certain types of future trail uses including hiking, cross-country skiing, horseback riding, bicycling, and snowmobiling.

In all alternatives, there will be a diversity of opportunities for future trail uses on the Finger Lakes National Forest. All future trail developments will be contingent upon management area direction, demonstrated demand, and site specific analyses.

Opportunities for future hiking and cross-country ski trails are essentially the same (+/- one percent) in all alternatives. Approximately 97 percent of the Forest would remain open to future hiking and cross-country ski trail development. Opportunities for future horseback riding trails are also essentially the same for all alternatives. Approximately 96 to 97 percent of the Forest would remain open to future horseback riding trail development. Future mountain bike trail development will also be allowed on 96 to 97 percent of the Finger Lakes National Forest.

Alternative 1 provides for the most (95 percent) of the Forest to remain open for future snowmobile trail development. Alternative 2 provides for the least (69 percent) of the Forest to remain open for future snowmobile trail development. Alternative 3 is intermediate and provides for 83 percent of the Forest to remain open for future snowmobile trail development.

Indicator 3: Acres of Land Available for Future Developed Recreation Facilities
New developed recreation facilities would be considered based on demonstrated visitor demand. Trends in visitor demand have the potential to add or reduce developed recreation facility capacity or alter existing facilities to accommodate changing social demands. Management area (MA) descriptions provide direction on where future developed recreation facilities may be constructed.

Alternative 1 allows 96 percent of the Forest to remain open to future developed recreation sites while less than one percent is limited to opportunities that complement the management areas' desired future conditions. This alternative provides the highest potential to add PAOT capacities (maximum number of people that that can be served at one time) to the developed recreation infrastructure.

Alternative 2 allows 71 percent of the Forest to remain open to future developed recreation sites and limits future developed recreation opportunities on the majority (26 percent) of the Forest. The ability to add PAOT capacity is reduced in Alternative 2 compared to Alternatives 1 and 3.

Alternative 3 provides that 84 percent of the Forest would remain open to future developed recreation facilities while 13 percent of the Forest would be limited. This Alternative provides for more future developed recreation facility PAOT capacity than Alternative 2, but less than Alternative 1.

Indicator 4: Acres of Land Available for Future Recreation Special Uses
Management area descriptions provide direction for where recreation special uses are compatible with resources across the forest. Even though recreation special uses are not in high demand on the FLNF, the revised Forest Plan provides direction on where future recreation uses are appropriate with desired future conditions. Existing recreation special use permits would not be impacted by any proposed alternative.

Most of the Forest (95%) would remain open to future recreation special uses in Alternative 1. This would provide for a higher capacity and greater diversity of recreation special use activities across the Forest. Alternative 2 would continue to provide for the majority of the Forest (69%) to remain open to future recreation special use activities, but would have less opportunity for future special use activities than Alternative 1. This would reduce the capacity and diversity of future recreation special use activities across the Forest. Alternative 3 would provide for an intermediate amount of the

Forest (83%) to remain open to future recreation special use activities compared to the other alternatives.

Indicator 5: Acres of Land Available for Future Timber Harvest and Grazing Activities
Timber harvest and grazing management typically impact recreation resource access, because of road building, and other alterations to the recreation setting. Open lands for grazing, bound by fences and populated by livestock, provide for rural character in the landscape. Grasslands also provide opportunities for long-distance viewing of Seneca and Cayuga Lakes. Timber and grazing management can have both positive and negative impacts to recreation resources. In the revised Forest Plan, timber management is allowed in the Oak Hickory and Northern Hardwood MA allocations and grazing management is allowed in the Grasslands for Grazing MA allocation. The alternatives provide for varying amounts of land to be allocated to these MAs.

Alternatives 1, 3 and 2 would have the most, intermediate and least potential, respectively for management activities that positively and negatively impact the recreation resource based on the amount of land allocated to MAs that allow timber and grazing management.

3.1.10 Areas of Special Significance

Areas of special significance include Research Natural Areas (RNA), candidate Research Natural Areas (cRNA), Ecological Special Areas (eSA), and old growth areas. The revised Plan does not identify any areas for addition to the National Wilderness Preservation System, or for addition to the National Wild and Scenic Rivers System.

Issue Statement
Public concern is focused on the desire for designation of special areas, resolution of existing candidate Research Natural Areas (cRNAs), and determination of the most appropriate mix, size, and configuration of future old growth and other special areas. This is an issue within the broader topic of restoration, protection, maintenance, and enhancement of biological and ecological diversity, and conservation of species, communities, and ecosystems.

Environmental Consequences
A fundamental principle of conservation biology is that representative examples of each type of ecological system, along with their full ranges of variation in composition, structure, and function, should be conserved in a way that prevents extractive management (for example, timber harvesting or drilling for oil or gas), while allowing some management activities that restore or maintain the system. These areas together can be described as ecological reference areas, and include such formal designations as Research Natural Areas, or other administrative designations like ecological areas, natural areas, or special areas. In these roles, ecological reference areas contribute to biological diversity, an element of ecosystem sustainability. There are 23 significant sites that have been evaluated as part of a review of Special Areas on the FLNF, and 11 of these sites are recommended for protection through management area designation. These 11 sites include the six current cRNA, the Ravine Trail eSA, and four new areas. The remaining 12 sites appear to be relatively easy to protect through standards and guidelines, as their values are associated with rare or uncommon plants that can be excluded from management actions.

Indicator 1: Acres of RNAs, cRNAs, eSAs, and Future Old Growth Areas
In all alternatives, areas identified as part of the ecological reference area network (RNAs, cRNAs, eSAs, Future Old Forest MA, and some unsuitable lands for timber production) will be managed similarly for natural forest ecosystem processes and development of old forest or old growth conditions. Management for timber and motorized or developed recreation are prohibited or limited in these areas. In the Future Old Forest MA, recreational use can include winter motorized uses, but no new motorized trails are allowed. Extraction of minerals is allowed in all of these areas, but only if they do not disturb the ground.

Consequently, the effects of the revised Forest Plan on the values represented by these management designations are positive. The alternatives, however, vary in the amount, location, and type of protected designation used.

Alternative 1 has the fewest acres within the ecological reference area network at 783 acres, or five percent, of the Forest. The cRNAs, eSAs, and unsuitable lands designated in this Alternative would develop into old forests over time and may eventually develop some old-growth characteristics. All of the current cRNAs remain candidates, and one additional ecological area is recommended for addition. These designations amount to 561 acres. One effect of this Alternative on current or potential cRNAs is that the four existing cRNAs considered unqualified by the scientific committee remain as designated cRNAs. The area of the Ravine Trail eSA remains the same designation and size. The 597 acres designated as eSAs or cRNAs in Alternative 1 have the potential to eventually develop old forest characteristics, although it may be many lifetimes before old growth by strict definition may develop in these areas. This Alternative does not allocate any acres to the Future Old Forest MA and therefore only small and fragmented blocks of land, mostly under 100 acres in size, may develop into old forest.

The acreage within the ecological reference area network across Alternatives 2 and 3 varies from 4,854 acres (30%) in Alternative 2 to 2,655 acres (16%) in Alternative 3. Under Alternatives 2 and 3, all areas recommended for special area designation are placed in one of these three MAs (cRNA/RNA, eSA, or Future Old Forest). The variation in total acres across these two alternatives is due to the amount of Future Old Forest. In Alternatives 2 and 3, two out of 11 of the cRNAs from Alternative 1 are recommended for RNA designation. Alternatives 2 and 3 designate all of the areas recommended for special area status in a protected designation.

Alternative 2 allocates the most acres to the Future Old Forest MA (3,821 acres) compared to Alternative 1 (no acres) and Alternative 3 (1,398 acres). Alternatives 2 and 3 have the greatest potential for old forest conditions to develop on larger areas of the Forest (30 and 16 percent, respectively) due to the Future Old Forest allocation in these two alternatives. Large blocks of contiguous forest are allocated to this MA under both alternatives.

Indicator 2: Percentage of Ecological Units Represented Within the Ecological Reference Area Network (RNAs, cRNAs, eSAs, and Future Old Growth Areas)

Areas within the ecological reference area network will be managed similarly under all alternatives for natural forest ecosystem processes and development of old forest or old growth conditions. Revised Forest Plan objectives indicate a desire to manage at least five percent of each ecological type present on the Forest for old growth characteristics.

Under Alternative 1, the proportion of ecological land types (ELTs) represented within the ecological network is almost identical to that of the existing condition. All 14 ELTs are represented in the ecological network, but at percentages ranging from less than one percent to 30 percent. Most ELTs have less than ten percent of their acreage in the ecological network. In addition, nine out of 14 ELTs have less than five percent within the network, thus Alternative 1 would not meet the five percent ELT old growth objective. Achievement of the objective would require acquisition of new lands and allocation of some of those lands to the RNA/cRNA, eSA, or Future Old Forest MAs. Six landtype associations (LTAs) are represented within the ecological network, with proportions ranging from less than one to 13 percent of the Forest. Three of the six LTAs are represented at five percent or more, while the other three LTAs do not meet the revised Forest Plan objective of representation of ecological types.

All ELTs and LTAs are represented at above five percent in Alternative 2. This Alternative has the highest representation of ELTs in protected management areas, ranging from 14 to 72 percent of ELTs represented. LTAs are similarly well represented in this Alternative, ranging from 10 to 50 percent.

Alternative 3 is intermediate in providing representation of ELTs in areas managed for natural processes and older forest conditions. The proportion of the 14 ELTs represented in these management areas ranges from six to 43 percent, with all ELTs meeting or exceeding the revised Forest Plan objective of maintaining five percent of each ELT in such areas. The proportion of LTAs represented remains above five percent for all the types, ranging from seven to 44 percent.

Table ES-8: Acres of FLNF land suitable for timber production by alternative.

	Alt. 1 Current Mgt.	**Alt. 2**	**Alt. 3**
	acres (percent)	acres (percent)	acres (percent)
Suitable Land	6,677 (41%)	3,846 (23%)	5,700 (35%)

3.1.11 Timber Management

Issue Statement

Public concern is focused on the role of timber harvesting, the amount of timber harvested, harvest methods, and management intensity. In addition, impacts of timber management activities on recreation, wildlife, and socio-economic resources are a concern. Other concerns include the continued use of FLNF timber sales as demonstrations of sustainable forestry. This analysis will compare how the alternatives address different levels of timber harvesting (intensity), methods and uses for timber management, and the desired mixes and locations of various forest type composition and age classes.

Environmental Consequences

Although there have been changes proposed in the revised Forest Plan goals, objectives, and Forest-wide standards and guidelines, the overall direction associated with timber management on the FLNF to meet different resource objectives would not be greatly altered. Each alternative, however, has a different level of opportunity for timber management over the short and long-term time period. The difference in the opportunity for timber management by alternative is highlighted by the indicators since each alternative has a different mix of MA allocations where timber harvest is emphasized.

Indicator 1: Acres of Land Identified as Suitable for Timber Production

Suitable forest land constitutes the land base for determining the average annual Allowable Sale Quantity (ASQ) where management for timber production occurs on a regulated basis. The amount of land identified as suitable for timber production varies between alternatives by the amount of land allocated to management areas where timber production is appropriate (Table ES-8).

The MAs that are appropriate for timber production include: Northern Hardwood and Oak/Hickory Management Areas. These MAs also contain some lands that are not appropriate for timber production, such as inclusions of steep slopes, wet soils, and riparian areas. Outside the Oak Hickory and Northern Hardwood MAs, timber harvest occurs infrequently and does not contribute to the ASQ.

Indicator 2: Timber Sale Volume (Allowable Sale Quantity)

Allowable sale quantity (ASQ) is defined as the quantity of timber that may be sold from the area of suitable land covered by the Forest Plan for a time period specified by the Plan. This quantity is usually expressed on an annual basis as the average annual allowable sale quantity. The ASQ is the sum of all the wood products and expressed in millions of board feet (MMBF) or millions of cubic feet (MCF).

The application of vegetation treatments and allocations to various management areas affects the potential volume of timber produced under each alternative. For the purpose of this analysis, the short-term covers the first decade and the long-term reaches 15 decades into the

future. Table ES-9 displays each alternative's average annual ASQ for the short and long-term.

The timber volumes are the maximum amount of timber products that could be sustainably harvested and sold. Volumes are displayed in thousands of board feet (MBF) for all commercial wood products including sawtimber, pulpwood, commercial firewood, and other wood products. The model outputs are calculated assuming full funding of the timber program and availability of product markets. The model also incorporates known resource conditions and revised Plan vegetative objectives, standards and guidelines. For all alternatives, the ASQ consists of a 50/50 mix of sawtimber to pulpwood in the first decade, and would change to a 60/40 mix in 150 years.

Table ES-9: Proposed average annual allowable sale quantity (ASQ) for the next 15 decades, by alternative.

Decade	Alt. 1 Current Mgt.	Alt. 2	Alt. 3
	(MBF)[1]	(MBF)[1]	(MBF)[1]
1	425	94	258
2	425	94	258
3 to 15	439	94	258

Notes: This analysis was run for each decade up to 150 years into the future. [1] MBF = Thousand Board Feet
Source: SPECTRUM model output, 2004 & 2006 for FLNF

Indicator 3: Silvicultural Prescriptions: Acres by Timber Harvest Method
Table ES-10 shows the average annual acres proposed to be harvested on the Forest under all alternatives between 2005 and 2014.

All alternatives provide opportunities to implement a mixture of all harvesting methods. This analysis assumes that although any silvicultural methods may be used, generally even-aged methods will be used in the Oak Hickory MA and uneven-aged methods (individual tree and group selection) will be used in the Northern Hardwood MA. Clearcutting would occur in stands of aspen, locust, and non-native conifers. Shelterwoods and thinning would occur in oak-hickory stands.

Table ES-10: Projected average annual acres to be harvested between 2005 and 2014.

Harvest Method	1987 Plan	Alt. 1 Current Mgt.	Alt. 2	Alt. 3
	acres percent	acres percent	acres percent	acres percent
Thinning	50 (42%)	55 (42%)	10 (28%)	29 (33%)
Shelterwood Regeneration	30 (25%)	25 (19%)	5 (14%)	12 (14%)
Selection	15 (12%)	35 (26%)	15 (43%)	36 (41%)
Shelterwood Removal	20 (17%)	9 (7%)	3 (8%)	6 (7%)
Clearcut	5 (4%)	8 (6%)	2 (7%)	4 (5%)
Total	**120**	**132**	**35**	**87**

3.1.12 Range Management

Issue Statement
Public concern is focused on the availability of resources for maintenance of grassland, pasture, and infrastructure, and the need for monitoring of grazing management effects on grassland species and aquatic ecosystems. Range management is part of the general issue of biodiversity and ecosystem management.

Environmental Consequences
Indicator 1: Animal Unit Months (AUMs)
An Animal Unit Month (AUM) is defined as the amount of feed required by an animal unit for one month. An Animal Unit is a production measurement based on one mature (1,000 lb.) cow having an average daily forage consumption of 26 pounds of dry matter. Animal Unit Months (AUMs), based on the number of rangeland acres grazed with livestock, are calculated for each alternative. These calculations account for the need to conserve sufficient ungrazed vegetation for grassland-dependent wildlife species, notably songbirds, by limiting the amount of forage utilized by cattle to 60 percent of the total forage in the pasture. The AUMs per acre are approximately 2.4.

All alternatives would accomplish the goals and objectives of the revised Forest Plan by providing sustainable use of grasslands for

grazing on the FLNF. Under all alternatives, there will be no reduction in acreage currently grazed annually and that have infrastructure (such as fencing and livestock ponds) in place. Under all alternatives, sufficient vegetation for wildlife using grazed fields is provided. None of the alternatives propose more than 60 percent of the available forage for use by livestock. In the Grassland for Grazing Management Area (MA), additional infrastructure improvements, such as fencing and livestock ponds, will be made on acres that do not already have improvements. This means that improvements will be made on 544 acres in Alternative 1 and 159 acres in Alternatives 2 and 3.

Under Alternative 1, 5,912 acres (36% of the FLNF) is designated in the Grassland for Grazing MA and is available for grazing. This alternative has a production estimate of 9,705 AUMs and can provide forage for 1,317 cow and cow/calf pairs.

Alternatives 2 and 3 allocate 662 acres less than Alternative 1 to the Grassland for Grazing MA. Alternatives 2 and 3 have production estimates of 9,510 AUMs and can provide forage for 1,291 cow and cow/calf pairs. Areas in the Grassland for Grazing Management Area in Alternative 1 are designated as Grasslands for Wildlife in Alternatives 2 and 3.

Indicator 2: Number of Livestock Watering Facilities Maintained, Enhanced, or Created
Based on current condition inventories, eleven of the existing 46 watering ponds and three of ten existing watering troughs require maintenance over the next 10 to 15 years under all alternatives.

Under Alternative 1, a total of 21 facilities may be created, maintained, or enhanced over the next 10 to 15 years. An estimated six ponds and one trough will require construction as an additional six pastures are brought into production on lands that do not currently have grazing infrastructure.

Under Alternatives 2 and 3, a total of 16 facilities (five less than in Alternative 1) may be created, maintained, or enhanced over the next 10 to 15 years. An estimated two ponds will be constructed as two additional pastures are brought into production on lands that do not currently have grazing infrastructure.

3.1.13 Non-Recreation Special Use Management

Issue Statement
There is on-going concern and debate about special use management on the GMNF. Specifically, there is concern about what permit types are appropriate for the GMNF and the use of NFS lands for development of wind power and communication sites. Forest Plan revision will determine where particular activities could be allowed and the standards and guidelines for these uses.

Environmental Consequences
Indicator 1: Acres in Management Areas Allowing Wind Power Development, New Communication Sites, and New Gas Pipelines
Alternative 1 allows 15,624 (95 percent) acres of the Forest to be considered for the development of wind power, communication sites, and new gas pipelines. The only areas excluded from consideration are the special areas, which would include some areas within the North Country Trail corridor. This alternative would give the Forest Service the most flexibility in siting non-recreation special uses.

Alternative 2 allows 11,380 acres (70 percent) of the Forest to be considered for the development of wind power, communication sites, and new gas pipelines. This alternative would provide the least amount of opportunity for siting non-recreation special uses.

Alternative 3 allows 13,584 acres (83 percent) on the Forest for the development of wind power, communication sites, and new gas pipelines. Alternative 3 is intermediate between the other two alternatives in opportunity to allow these special uses to occur.

Indicator 2: Acres in Management Area Allocations Allowing New Discretionary Authorizations

Alternative 1 would allow for a full range of discretionary uses to be considered on 15,842 acres of the Forest. New discretionary uses would be allowed on a restricted basis within the 597 acres. This alternative would allow the Forest Service the most flexibility and least restrictions for issuing new discretionary authorizations. Alternative 2 would allow for a full range of discretionary uses to be considered on about 11,598 acres of the Forest. New discretionary uses would be allowed on a restricted basis within the 4,841 acres. Alternative 2 would allow the least amount of opportunities for issuing discretionary authorizations. Alternative 3 would allow for a full range of discretionary uses to be considered on about 13,802 acres of the Forest. New discretionary uses would be allowed on a restricted basis within the 2,637 acres. Alternative 3 is intermediate between Alternatives 1 and 2 for opportunities for issuing discretionary authorizations.

3.1.14 Visual Resources

Issue Statement

Concern is focused on continuous succession and growth of forest vegetation that is causing change to the landscape and reducing or eliminating some viewsheds. Viewshed management can enhance opportunities for viewing near or distant scenery. Viewsheds include individual observer positions (vistas) or the total visible area from multiple observer positions. Vistas include a point or area along a travelway from which people view scenery and include the land that is managed to allow the viewshed to be seen.

Environmental Consequences

Indicator: Acres in Management Areas with Similar Opportunities for Viewshed Management

All alternatives meet the intent of the goal to maintain or enhance visual resources and offer a diverse range of vegetative types across the FLNF, which includes grassland, shrubland, and mature forest. This landscape mosaic creates the overall landscape character of the Forest. The alternatives differ in the amount, location, and degree of viewshed management permitted by management area.

For this analysis, management areas (MAs) were placed in three groups according to the opportunity they provide for viewing scenery and visual resource management, which includes the creation, maintenance, and enhancement of viewsheds.

Group 1: Grassland for Grazing, Grassland for Wildlife, and Shrubland MAs. These MAs provide the greatest opportunity for viewing scenery.

Group 2: Recreation and Education Special Areas, North Country National Scenic Trail Special Area, Oak Hickory, and Northern Hardwood MAs. These MAs provide moderate opportunities for viewing scenery.

Group 3: Future Old Forest, Ecological Special Areas, and Existing and Candidate Research Natural Areas MAs. These MAs are most restrictive for viewing scenery. Vista and timber management restrictions in these Management Areas result in less opportunities for viewing of foreground, middleground, and background scenery than in the other MA groups.

Table ES-11 depicts acres of NFS lands on the FLNF grouped by management areas with similar opportunities for viewshed management. Alternative 1 least restricts viewshed management and offers the greatest opportunities for viewing scenery because under this Alternative the most acres are in Groups 1 and 2 and the least in Group 3. Alternative 2 most restricts viewshed management and offers the least opportunities for viewing scenery because under this

Alternative the most acres are in Group 3 and the least in Groups 1 and 2. Alternative 3 is intermediate between Alternatives 1 and 2 for opportunities for viewing and viewshed management. Permanent openings associated with grassland and shrubland aesthetics vary little between Alternatives 2 and 3. Alternative 3 differs from Alternative 2 in that more lands are allocated to Group 2 and less to Group 3. Alternative 3 therefore provides more opportunities for creating and maintaining vistas than Alternative 2.

Table 3.14-1: Acres of National Forest System lands on the FLNF grouped by management areas with similar opportunities for viewshed management.

Management Area Group	Alt. 1 Current Mgt.	Alt. 2	Alt. 3
	acres (percent)	acres (percent)	acres (percent)
Group 1[1]	8,455 (52%)	7,206 (44%)	7,359 (45%)
Group 2[2]	7,387 (44%)	4,556 (28%)	6,607 (40%)
Group 3[3]	597 (4%)	4,677 (28%)	2,473 (15%)
Total (100%)	16,439	16,439	16,439

Source: FLNF GIS alternative MA layer
Notes:
[1] Group 1: Grassland for Grazing, Grassland for Wildlife, and Shrubland
[2] Group 2: Recreation and Education Special Areas, North Country National Scenic Trail Special Area, Oak Hickory, and Northern Hardwood
[3] Group 3: Future Old Forest, Ecological Special Areas, and Existing and Candidate Research Natural Areas

3.1.15 Heritage Resources and Tribal Relations

Issue Statement

Public concern is focused on the need to protect and preserve significant heritage resource-related sites and provide more information and education about heritage resources on the FLNF. The Forest Plan has specific standards and guidelines for heritage resources and heritage interpretation and education.

The Forest Service currently keeps representatives of the Seneca and Cayuga Nations apprised about FLNF projects and programs, and is seeking to improve consultation efforts.

Environmental Consequences

Indicator 1: Number of Existing and Potential Heritage Sites Located in Management Areas that Allow Ground Disturbing Activities

All alternatives do a good job of protecting heritage resources since standards and guidelines, and in-field methods and measures for protecting sites, are effective when implemented. Occasional human error in implementation can result in damage to heritage resource sites. Therefore, under all alternatives, it can be anticipated that heritage resources will be considered in the planning process and protected in general, but that adverse effects on such sites will occur as a function of the frequency and/or amount of ground disturbing activities because of the correlation with greater opportunities for human error.

In Alternative 1 nearly half of the known historic sites (48%) and a third (30%) of the Forest acres with high likelihood of containing prehistoric sites are located in the Grassland for Grazing and Grassland for Wildlife Management Areas, with the balance of the historic sites mostly in the Oak Hickory or Northern Hardwood MAs (35%) and the Shrubland MA (13%). Alternative 1 has the potential to have greater effects on heritage resources than Alternative 2 and slightly more than Alternative 3.

In Alternative 2, twenty-five percent of the known historic sites are located in Recreation and Education Special Areas and Future Old Forest, while only 18 percent are in active timber management areas (Oak-Hickory or Northern Hardwood MAs). Alternative 2 would therefore have less potential effect on heritage resources than either of the other Alternatives.

From a heritage resources perspective, the distribution of sites and activities in Alternative 3 closely resembles Alternative 1. Oak-Hickory and Northern Hardwood MAs contain 30

percent of the known historic sites and 61 percent of the acres sensitive for prehistoric sites. Grassland for Grazing and Grassland for Wildlife MAs contain 47 percent of the known historic sites and 28 percent of the acres sensitive for prehistoric sites. The Shrubland MA contains 10 percent of the known historic sites and only three percent of the acres sensitive for prehistoric sites. The potential effects of Alternative 3 would therefore be slightly less than Alternative 1 and greater than Alternative 2.

3.1.16 Fire Management

Issue Statement
Public concern is focused on defining the ecological role of fire on the FLNF. The issue of fire ecology is part of the broad plan revision issue of restoring, protecting, maintaining, and enhancing biological and ecological diversity.

Environmental Consequences
There is a desire to manage wildland and prescribed fire so that various vegetation types and species can be maintained, public and firefighter safety is assured, and facilities such as houses, buildings, administrative sites, campgrounds, and communication sites, are protected. Of particular concern is the interface between increased private development and public lands. This is referred to as the Wildland Urban Interface (WUI) and includes lands within a mile and a half from improvements, such as homes and powerlines. All of the Finger Lakes National Forest is considered part of the WUI.

Indicator 1: Acres in Management Area Allocations where Wildfire would be Suppressed
The Forest-wide potential effects of wildfire, based on average and historical conditions, will be generally small-scale across all alternatives. Wildfires would be suppressed within all FLNF management areas for all alternatives.

Indicator 2: Acres in Management Area Allocations where Prescribed Fire would be allowed
Prescribed fire can be used to achieve desired vegetation conditions in all management areas. Within the Existing and Candidate Research Natural Areas MA prescribed fire can only be used where needed to maintain the values for which the areas were established. Although there is opportunity for prescribed fire within all MAs, only a small portion of the MAs would actually be subject to prescribed fire in any given alternative. Prescribed fire results in consumption, and subsequent reduction, in the amount of woody fuels within a treated area. Burns usually result in a mixture of burned, partially burned, and unburned vegetation. The amount of fuel reduction will depend on initial conditions, including fuel moisture, type, size, and arrangement. Fuel reductions are temporary, lasting until vegetation becomes reestablished. Reestablishment can occur within one year for fine, grassy fuels.

3.1.17 Special Forest Products

Special forest products are defined by the Forest Service as a subset of forest products that the Agency permits to be sold from lands within the National Forest System. They include:

- Non-timber vegetative products, such as mosses, fungi, bryophytes, roots, bulbs, berries, seeds, wildflowers, ferns, and transplants of shrubs
- Non-convertible timber products that cannot be measured in cubic feet of wood, such as Christmas trees, tree sap, boughs, bark, cones, burls, and transplants of trees
- Convertible timber products that can be measured in cubic feet of wood, such as posts, poles, rails, shingle and shake bolts, firewood, fence stays, mine props, and bow staves.

Issue Statement

Public concern is focused on the need for more guidance on how to address permits for gathering of special forest products. There were also concerns regarding the need for more guidance on what types of products can be gathered, where they can be gathered, and the availability of special forest products in general. There has been public interest in seeing greater availability of black locust as a special forest product beyond what is needed for Forest Service administrative use.

Environmental Consequences

Indicator: Acres in Management Area Allocations that Allow the Collection of Special Forest Products (Acres of Availability)

The effects of the changes in management guidance in the revised Plan will be the same across all alternatives, and will generally be positive. The removal of language in the revised Forest Plan regarding specific output expectations for blueberry or locust management provides increased flexibility for managers, which is also a positive effect. Regardless of alternative, proposals for gathering that would require a permit for personal or commercial use would be governed by individual product plans that specify constraints on collection, as well as by Forest-wide direction for sustainability and resource protection.

Over the next 15 years, some products gathered for incidental use may become highly valued enough to lead to the need for permitting. Such changes in administration of these products are usually documented in supplements to the Forest Service Manual system. If such a change were to happen, the effects associated with permit gathering described below would then apply.

Under all alternatives, the entire FLNF remains open to incidental gathering for personal use of special forest products. Management areas vary in what types of permit gathering they allow, prohibit, or otherwise constrain. Because management area allocation varies by alternative, the acres of land available for special forest products gathering also vary by alternative. Lands available for personal use permit gathering range from 72, 85, and 96 percent of the Forest for Alternatives 2, 3 and 1, respectively. Similarly, lands available for commercial use permits range from 69, 83, and 95 percent for Alternatives 2, 3 and 1, respectively. For availability of existing black locust stands, Alternative 2 has substantially lower acreage available than either Alternatives 1 or 3, which are similar. However, even with less than half of existing stands potentially available for gathering under permit in Alternative 2, this use has not yet occurred on the Forest, and no product plans or analysis of limits have been developed.

3.1.18 Minerals

Issue Statement

Public concern is focused on the availability of oil and gas resources for lease on the FLNF and the effect that this activity could have on the region's "sense of place." Sense of place can be referred to as community values.

Environmental Consequences

In response to an industry proposal in 1998 to lease the entire Forest for oil and gas development, the Forest Service issued a Record of Decision in which they decided not to lease the oil and gas resource. The Record of Decision stated that if new information became available and prompted a new proposal, then additional analysis would occur at that time. New information includes a change in public attitude toward the need to access the natural gas under the Finger Lakes National Forest. This may be in the form of a domestic energy crisis or other unforeseen event. It would not include merely a new request for leasing received by the Forest Service. Currently, there are no leases for oil or gas on the Forest. The Interior Appropriation Bills for Fiscal Years 2001 through 2005 have included language that prohibits the leasing of oil or gas resources on the FLNF. Pursuant to Section 370 of the Energy Policy Act of 2005, all federal land within the boundary of the Finger Lakes National Forest is withdrawn from oil and gas leasing.

Indicator 1: Acres in Management Area Allocations Available for Mineral Leasing
Under all alternatives, federal lands on the FLNF would not be available for oil and gas leasing, pursuant to Section 370 of the Energy Policy Act of 2005. Therefore, there would be no potential effects from oil and gas leasing activities under any of the alternatives. Gravel deposits occur on the southern end of the Forest. In 1984 one small pit was developed on the Forest for administrative use.

Indicator 2: Acres in Management Area Allocations Open to Surface Occupancy
Surface occupancy for sand and gravel extraction is allowed in five Management Areas (MAs): Grassland for Grazing, Grassland for Wildlife, Shrubland, Northern Hardwood, and Oak Hickory.

Under Alternative 1, surface occupancy could occur on 15,624 acres (95% of the FLNF). Alternative 1 provides the greatest flexibility for development of FLNF mineral resources because it allocates the most acres to MAs that allow for surface occupancy. Under Alternative 2, surface occupancy could occur on 11,380 acres (69%). Alternative 2 provides the least flexibility for development of FLNF mineral resources because it allocates the least acres to MAs that allow for surface occupancy. Under Alternative 3, surface occupancy could occur on 13,584 acres (83%). This alternative allows for an intermediate level of flexibility for development of FLNF mineral resources compared to Alternatives 1 and 2.

3.1.19 Road Management

Issue Statement
Concern is focused on maintenance of the existing road network, and construction of new roads, to provide access within and to the Forest while minimizing environmental impacts.

Environmental Consequences
Ninety-six percent (70.1 miles) of the roads in the FLNF area are State, county, town, or private roads. The Forest Service has jurisdiction over the remaining four percent (3.1 miles). In general, the existing Forest Road system, in conjunction with local, private, county, and State highways, provides adequate access to public lands.

Indicator: Acres in Management Area Allocations that Restrict Road Development and Construction
All alternatives allow for the development and construction of temporary or permanent roads within the following MAs: Grassland for Grazing, Grassland for Wildlife, Shrubland, Northern Hardwoods, and Oak Hickory. The existing road system will provide adequate access to the FLNF and nearby private lands and meet Forest needs in the short-term under all alternatives. Opportunities for new road construction to meet long-term access needs to the FLNF and nearby private lands vary by alternative.

Alternative 1 allows 15,624 acres (95%) of the Forest to remain open to the development and construction of new temporary or permanent roads. Alternative 1 provides the most opportunities for future road construction. Alternative 2 allows 11,380 acres (69%) of the Forest to remain open to the development and construction of new temporary or permanent roads. Alternative 2 provides the least amount of opportunities for new road construction compared to Alternatives 1 and 3. Alternative 3 allows 13,584 acres (83%) of the Forest to remain open to the development and construction of new temporary or permanent roads. Alternative 3 is intermediate between Alternatives 1 and 2 in opportunities for new road construction.

3.1.20 Social and Economic Factors

Issue Statement
Public concern is focused on the costs and benefits of having National Forest System lands in Schuyler and Seneca Counties. Concern is also focused on the role the Forest Service has in addressing community concerns and opportunities. The areas of tax loss from Forest Service land ownership and acquisition; potential revenues and employment that could be generated from forest products, tourism, other forest related activities; and changing demographics are also of concern.

Environmental Consequences
The Forest Service manages FLNF land in two counties (Schuyler and Seneca) and FLNF lands fall within the boundaries of three towns in these two counties (Lodi, Hector, and Covert). Local residents' involvement in FLNF issues and activities has shown that residents care very strongly about the FLNF. The FLNF plays an important role in the area by providing recreational opportunities, heritage resources, natural areas, wildlife habitats, educational opportunities, wood, forage and other social and economic benefits. The FLNF has a unique history and special relationship to local communities. It was through grassroots support of local residents that this area was designated a National Forest in the 1980s when it was being considered for disposal as federal land. Local communities and their interests have always played a very important role in FLNF management.

Indicator 1: Community Values
Alternative 1 provides more opportunities for timber harvesting, grazing, trail development, and snowmobile trail use than the two other alternatives. It does not provide opportunities for semi-primitive recreation, provides the least acres in the Grasslands for Wildlife MA, and the least area of closed canopy forest. With this in mind, Alternative 1 provides a limited range of management opportunities to address community values.

Alternative 2 provides the fewest opportunities for timber harvesting, trail development, and snowmobile trail use. It provides the greatest opportunities for semi-primitive recreation, the largest area in closed canopy forest, and the largest area in continuous forest. It provides approximately the same amount of grasslands for grazing and grasslands for wildlife as Alternative 3. With this in mind, Alternative 2 provides a limited range of management opportunities to address community values. This limited range is different than that found in Alternative 1, because it emphasizes different management opportunities.

Alternative 3 is intermediate and provides fewer opportunities for timber harvesting, trail development, and snowmobile trail use than Alternative 1, but more opportunities than Alternative 2. It provides more opportunities for semi-primitive recreation and area of closed canopy forest than Alternative 1, but fewer opportunities than Alternative 2. Alternative 3 provides approximately the same amount of grassland for grazing and grassland for wildlife as Alternative 2. Of the three alternatives, this Alternative provides the broadest range of management opportunities to address community values.

Indicator 2: Economic Impacts
All alternatives would contribute positively to the local economy. The recreation and timber programs would contribute the most jobs and industry income. There are no major differences between alternatives in the economic contribution. Some minor differences are worth mentioning. Alternative 1 provides the most potential for employment and industry income contributions from Forest Service programs. Alternative 2 provides the least potential for employment and industry income contributions from Forest Service programs. Alternative 3 provides a slightly greater potential for employment and industry income contributions from Forest Service programs than Alternative 2, but less than Alternative 1.

Indicator 3: Forest Payments to Counties
Since Payment in Lieu of Taxes (PILT) are based on the amount of acreage under Forest Service administration, these payments are not affected by changes in the Forest Plan and resource output levels as a result of direction provided in the Forest Plan. Both Schuyler and Seneca counties chose the Full Payment Fund based on the State's three highest 25-Percent Fund payments between 1986 and 1999 instead of the 25-Percent Fund that is based on yearly revenues generated by resource outputs. Basing Secure Schools Act payments on past revenues means that the payments would not vary between alternatives.

Table ES-12: Present Net Value (PNV)[1]

	Alt. 1	Alt. 2	Alt. 3
	thousands of dollars	thousands of dollars	thousands of dollars
Non-Market Assigned Value	$16,123	$16,123	$16,123
Market Value without Timber	-$22,188	-$22,188	-$22,188
Timber Market Value	$2,663	$432	$1,487
TOTAL PNV	**-$3,402**	**-$5,633**	**-$4,578**

[1] Present Net Value (PNV) is the measure used to calculate the economic efficiency of managing a National Forest.

Indicator 4: Present Net Value (PNV)
Table ES-12 provides the PNV for the alternatives.

The PNV for non-market assigned values is the same for all alternatives. The PNV market values for resources other than timber are also not expected to vary by alternative. These values include all the costs and revenues received from all other Forest Service programs. Alternative 1 provides the highest PNV due to the greater potential amount of timber to be harvested and the greater area under even-aged management. Alternative 2 provides the lowest PNV due to the lower potential amount of timber to be harvested and the lower potential amount of even-aged management. Alternative 3 is intermediate and provides the middle PNV due to the intermediate potential amount of timber harvesting and even-aged management.

3.1.21 Environmental Justice

Principles for considering environmental justice under NEPA are set forth in "Environmental Justice, Guidance Under the National Environmental Policy Act" (Council on Environmental Quality, 1997). Before a policy, proposal or, as in this case, a Forest Plan is implemented, the likelihood of a disproportionate effect on minority or low-income populations must be investigated and disclosed.

Adoption and implementation of the revised Forest Plan is not expected to have a disproportionate adverse direct, indirect, or cumulative impact on minority or low-income populations over the life of the Plan, regardless of the alternative selected. No issues related to potential disproportionate impacts on either of these demographic groups were identified during public involvement associated with the Forest Plan revision process.